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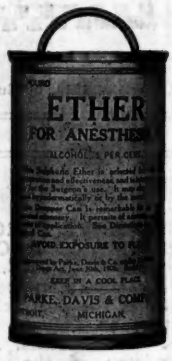

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FURTHER EXPERIENCES WITH THE INVERSION METHOD FOR THE TREATMENT OF GIANT VENTRAL HERNIA.*

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NEW YORK CITY.

Since writing my paper a year ago upon "The Treatment of Large Ventral Hernia by Inversion of the Hernial Sac: With or Without Opening Into the Peritoneal Cavity" (*New York State Journal of Medicine*, December, 1913), I have operated upon seven additional cases in which I followed the plan described in that paper.

Four of these cases were types of giant hernia, while the three remaining ones were simply large.

One of the former cases was complicated by acute intestinal obstruction; another was one with chronic obstruction to which semi-acute symptoms had been added. Both were in women weighing over 200 pounds, with very large hernia. The former case healed per primam with a perfect result; and the second one, although complicated with intestinal rupture, fecal fistula, extensive sloughing of the fascia, and fat abdominal wall, also recovered with a solid scar. This case is very valuable in that it shows that a cure may be obtained in extreme circumstances by this method.

With the experience of fourteen cases I can urge still more emphatically the use of this method for the cure of a condition that is one of the most trying that surgeons have to meet.

There were no fatalities. Primary union resulted in all but the case referred to above and one in my first series who had a superficial suppuration caused by scratching beneath the dressings. All are cured.

There has been no intestinal paralysis or obstruction due to increased intra-abdominal pressure or intestinal kinks. I can confirm my first statement, that the added tension within the abdomen seems to aid in promoting an early action of the bowels and has not produced respiratory or cardiac embarrassment.

*Read before the Harlem Medical Association, March 4, 1914.

The possibility of puncturing the intestine when the sutures are inserted without opening the sac is granted. Such contraindication for incision into the sac will arise only rarely. Either with a free opening, as is usual, or by one or several incisions only large enough to admit a finger into the peritoneal cavity, the mattrass sutures may be safely inserted without danger to the intestine.

As stated above, I have shown that with a proper technic this method will withstand the test of an extensively suppurating wound. However, suppuration is to be prevented by every surgical precaution.

THE INVERSION METHOD FOR TREATING GIANT HERNIA.

I shall not reproduce here any argument for favoring this method over many of the others now in vogue, but shall merely briefly review the various steps, as published in my first paper.

Large elliptical incisions expose the sac, which, with the external fascia of the abdomen, is cleaned for more than two inches beyond the hernial orifice.

If the sac is to be left practically intact, the elliptical portion of skin must be dissected cleanly away. Usually, however, the portion of sac corresponding to the elliptical mass of skin is removed with the latter, thereby freely opening into the peritoneal cavity. Any complications found are dealt with in the usual manner.

In my experience, the intestine can be freed and any raw spot covered with omentum. Extensively adherent omentum need not be freed from the sac unless it seems to be exercising a deleterious traction on the intestine and stomach. The excess of omentum, usually very thick and adherent, may be trimmed off at a suitable point and the peritoneal cavity closed by uniting the edges of the sac, with this adherent omentum between, by an overcasting suture of No. 2 plain gut. Interlocking the stitch is sufficient to arrest oozing from the omentum.

Before the sac has been closed the first row of the inverting sutures of heavy kangaroo tendon is inserted. These are placed at the edge of the hernial orifice; they bite deeply into this edge for a width of three-fourths of an inch and are half an inch apart. Then the sac is closed, as detailed above, and this first row of mattrass sutures tied—

first above and then below until all have been tied. I use three knots in all these sutures. By this first series of sutures the bulging mass of sac (and also the omentum, if present) is inverted into the abdominal cavity. A second row of the same suture material is placed one inch outside the first row so as to "break joints."

Retention sutures are next inserted. These are introduced through the skin from two to four inches from the margin of the incision. They are placed not more than two inches apart and in a figure-of-eight manner, taking a deep bite into the fascia. When tightened they invert the last row of kangaroo sutures and take all the initial strain. They should be selected with regard to the particular case. The very largest hernia require either double strands of bronze wire, gauge No. 30, or

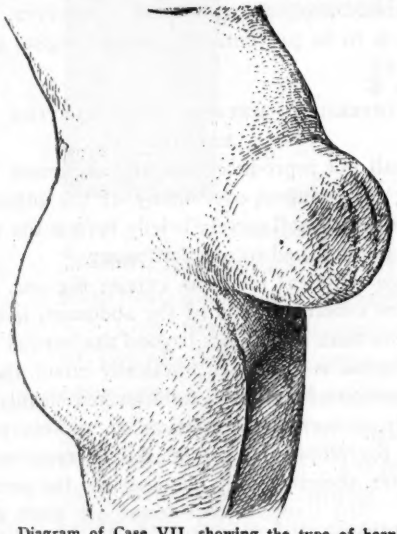


Fig. 1. Diagram of Case VII, showing the type of hernia under consideration.

single strands of a medium-sized twisted wire cable. In the smaller herniae double strands of silkworm-gut or Pagenstecher's linen may be used. All these sutures are doubled for a purpose. If one breaks the other is strong enough to hold; and, doubled, they do not cut so fast through the tissues. I used chromic gut in case XII. The result was perfect, but the gut absorbed at the end of ten days and I was anxious for the next week. These sutures are tied over rolls of gauze half an inch thick so as to afford a broad surface for traction and not necrose the skin from the pressure.

A drain of rubber tissue is laid over the retention sutures and the skin is closed by plain gut, Pagenstecher thread, or silkworm gut. The material is unimportant.

The drain should not be disturbed for three days. It is then withdrawn for an inch, and this is repeated every other day until it is entirely removed. These cases ooze a great deal of serum. Do not irrigate the drain tract, nor remove the drain to insert another. Infection is possible. Leave the drain as long as there is a free exudate of serum, and remove it gradually as this ceases. Keep the retention sutures tight. I usually tighten them up at the end of five or seven days, and remove them from the 10th to the 14th day after the operation.

Following the operation, a pint of normal saline solution is given per rectum every four hours day and night for 24 or 36 hours. Morphine, from ⅛ to ¼ grain with eserine salicylate 1/60 to 1/40 grain, is given if necessary once or twice during the first 24 hours.

These patients have no more pain than the average patient after laparotomy. The urine is drawn every six to ten hours as necessary. The patients are turned every hour from side to back and to side, if not asleep. This plan I follow out in all my abdominal cases to facilitate intestinal peristal-

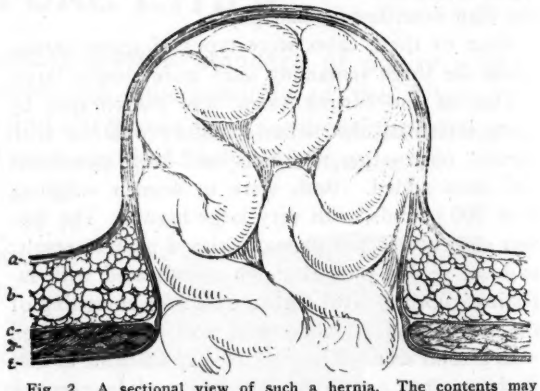


Fig. 2. A sectional view of such a hernia. The contents may be disregarded; the construction of the sac is the important feature. The different structures are lettered the same throughout: a. Skin. b. Subcutaneous tissue. c. External fascia covering the abdominal muscles. d. Muscular layer. e. Internal muscular fascia and peritoneum.

sis. These patients should be kept in bed about a week longer than the usual abdominal section. Their entire stay in the hospital is usually three weeks. Some I have allowed to go home in two weeks under favorable circumstances.

An abdominal belt is used in the majority of cases. I do not feel that it is a necessary part of the treatment, but it gives the patients comfort until the muscles resume their normal function.

CASE VIII:—Mrs. M., aged 55, patient of Dr. Boynton, with whom I operated to demonstrate the inversion method for hernia. Admitted to the Red Cross Hospital, April 22, 1913; discharged, cured, June 29, 1913. The patient is an extremely stout woman, with an immense abdomen. Thirteen years ago she was operated upon for an unbilical hernia.

For the past five years she has had trouble at the site of the hernia. She cannot walk about much because of her weight and the pain of the hernia.

Examination shows an umbilical hernia as large as a child's head just at the left of the umbilicus. It is irreducible. It seems to contain intestines and omentum.

By two long elliptical incisions the large hernial sac was exposed. It was found that there was a large hernial opening two inches in diameter with two or three smaller hernial protrusions through a weak scar below, so that the entire area, over six inches long and two inches wide, had to be inverted. The sac was opened to free the adherent intestines and omentum. In this step a loop of intestines was torn through and the rent was closed with Pagenstecher thread. In spite of the care used this accident infected the wound. This case is interesting as it proved that a cure was possible even in spite of such infection, as will be detailed presently.

The mass of intestines, transverse colon, and small intestines, with the stump of the omentum, were returned to the abdomen.

My method of suturing was carried out with this modification, that silver wire cable was used for the heavy retention sutures; and to this suture material a favorable result was probably due in spite of the suppuration. The skin was closed in the usual manner.

From the infection noted above a fecal fistula followed and discharged for several weeks with

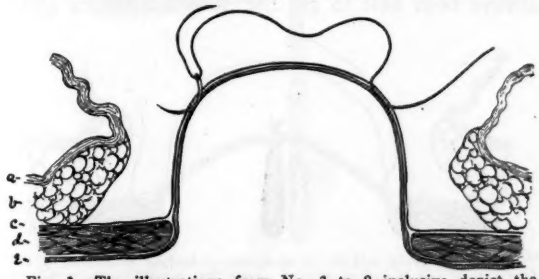


Fig. 3. The illustrations from No. 3 to 8 inclusive depict the steps in the operative treatment when the sac is not opened. This shows the skin dissected from the thin sac and the skin and subcutaneous tissue dissected back from the hernial orifice so as to leave a wide margin of the adjacent fascia cleanly exposed. The first suture, to take up the slack or fullness in the sac, is shown.

sloughing of the external fascia and adipose tissue. However, the wound finally healed solidly and the patient is today perfectly cured of her hernia.

The highest temperature was on the third day after the operation when it reached 102.6°. The bowels moved freely from the day of the operation.

The operation was performed on the 7th of May. She was out of bed on the 26th of June, and discharged cured on the 29th. To secure a cure in this patient in the absence of suppuration would have been a notable result, but to have a perfectly solid wound after a colon bacillus infection certainly demonstrates what a severe test the method can survive.

February 12, 1914.—Dr. Boynton reports that he has seen and examined the patient. She is doing her own work and feels perfectly well. The scar is solid everywhere with the exception of a little give in its upper part, where it seems thinner, but there is no hernia.

March 4, 1914.—This patient reported for observation before the Harlem Medical Association. She weighs 207 pounds. A careful examination of her abdomen shows a scar about eight inches long, consisting of firm abdominal wall minus the usual adipose layer. The absence of fat gives the appearance of a thinner wall, but the region is perfectly firm and there is no give in any part. The patient says she is perfectly well.

CASE IX:—Mr. J., about 30. Admitted to the Red Cross Hospital, May 11, 1913. Discharged June 1st. Patient of Dr. Marx, to whom I am indebted for the privilege of reporting the case. Some years previously he was operated upon for suppurative appendicitis. This was followed by a large spherical ventral hernia, situated along an oblique scar, the middle of which is about one inch to the right of the umbilicus.

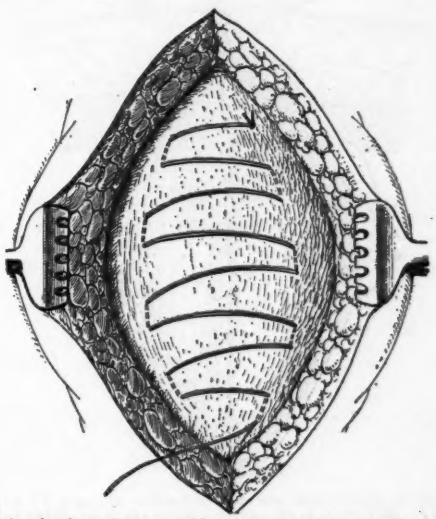


Fig. 4. A view of the outside of the hernial sac with the first inverting suture in position.

The hernial orifice is irregular, but measures about five inches by four.

Operation by Mr. Marx, assisted by me. Elliptical incisions, about seven inches in length, removed a mass of skin and old scar. The sac was purposely opened for the introduction of the mattrass kangaroo tendon sutures. There were no adhesions to the interior of the sac. The sac was inverted by a continuous suture of plain gut and two rows of kangaroo sutures, as above detailed. Chromic gut No. 2 double sutures were used for some of the fascial sutures and four double sutures of silk worm gut for retention purposes. The skin was closed by Pagenstecher thread over a small rubber tissue wick.

The course of the case was uneventful and the patient left the hospital on June 1st with a firm wound.

March 2, 1914.—Operated upon by Dr. Marx, assisted by me, for an indirect inguinal hernia on

the right side, which has developed since the operation detailed above for the post-operative hernia. (Dr. Marx had operated some few years ago for an indirect inguinal hernia on the left side. The result was a perfect cure.)

Through the last opening into the abdominal cavity an opportunity was given to examine the scar resulting from the inversion operation. It was solid and six inches long. The peritoneum was smooth and neither intestine nor omentum was adherent. The result was a perfect cure of the ventral hernia.

CASE X:—Mrs. R. W., 42. Admitted to Red Cross Hospital, May 20, 1913. Discharged, June 12, 1913. Large, stout woman. Has had five children.

Nearly two years ago was operated upon for lacerated perineum with complete prolapse of uterus.

Three months later noticed a small lump at right side of scar. This has grown steadily and rapidly

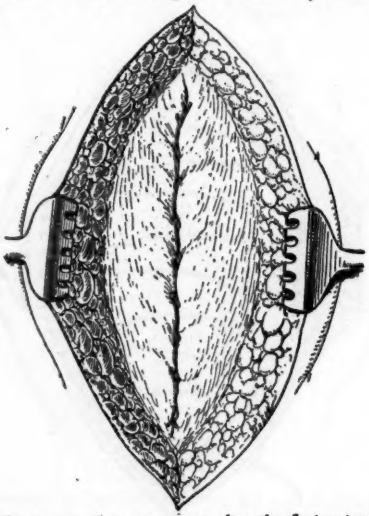


Fig. 5. Represents the appearance after the first suture has been drawn tight.

until now it is a mass as large as a child's head and projects through an orifice six by three inches. Has no pain and bowels are regular.

Perineum firm, uterus normal in size.

Operation, May 21, 1913. Gas and ether. Dr. Fletcher. Assistant, Dr. Boynton.

Elliptical incisions enclosing the hernial sac, eight or nine inches long. Sac exposed and fascia of abdominal muscles carefully cleaned for two inches distally from the hernial orifice.

Sac opened to admit one finger and kangaroo tendon mattrass sutures easily inserted, taking up a bite three-fourths of an inch wide and deeply into the margin of the orifice. These were placed half an inch from each other. There were no adhesions of omentum or gut to the sac. The small opening in the sac was closed, the sac inverted by tying the mattrass sutures and a second row of kangaroo tendon sutures placed to invert the first row.

Three double sikworm-gut retention sutures placed in a figure-of-eight manner and coming out through the skin four inches from the margin of the incisions.

Rubber tissue drain, deep skin suture of plain gut and superficial of Pagenstecher thread. The operation was finished by tying the double silkworm gut retention sutures over rolls of gauze.

Bowels moved on the third day after the operation and daily or every other day thereafter.

The patient was out of bed on the 21st day and left the hospital the following day.

Examination, June 19th, showed a perfect result.

Patient seen in December and stated she was "perfectly well."

CASE XI:—Mrs. J. B. C., patient of Dr. Arthur, Plattsburgh, N. Y., June 25, 1913. Strangulated umbilical hernia. Aged 65. Large, strong woman, weight 230, mother of eleven living children and seven dead, youngest 20 or 22.

She had an umbilical hernia for 20 years; during the past five years it has been irreducible and gradually growing larger. She has worn a large plate truss over the hernia for the past five years.

The bowels have always been obstinately constipated. They never move without a strong cathartic and with a great deal of pain. Has never been free from pain or distress in the hernia. She has had several attacks of strangulation before when she had to go to bed for from one to two weeks, with pain, vomiting, distention, fever and chills. Has always been able to get the bowels to move after

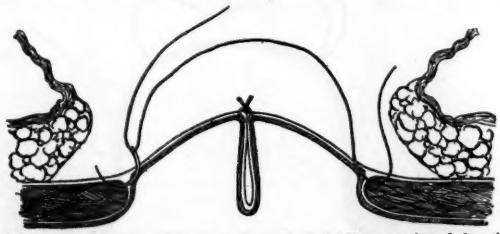


Fig. 6. A cross section to show the infolding produced by the first suture and the placement of suture No. 2. While the needle is represented as being inserted at right angles to the hernial margin in reality it is introducde parallel with the margin of the hernial opening and bites deeply into this margin.

hard work with enemas and cathartics. About two years ago had a very severe attack and operation was urged but refused.

This present attack began the 21st in the usual way, after eating a hearty meal. It was more severe than usual. She has vomited excessively and fecal matter on the last day. For the past 24 hours has been regurgitating thin, watery, black fecal smelling fluid, a mouth full or more at a time every little while. Bowels have not moved nor has she passed gas since the attack began. The pain in the abdomen and especially in the hernia has been severe. Temperature not greatly influenced. The pulse is about 90.

Examination: Large, stout woman, skin very dusky and muddy, tongue dry and coated in middle, edges moist. Fecal odor about mouth. Hernia, umbilical, sac irregular, lumpy, about six inches in diameter; tense, typmpanitic in spots and hard

in others. Very tender to the touch. In places where skin is thin it is dark, dusky, and inflamed.

Diagnosis: Strangulated, umbilical hernia, contents intestine and omentum. Operation urged. Refused, but finally accepted. Operation, Dr. Silver; assistant, Dr. Arthur; ether.

The writer's "inversion" method was carried out.

Two elliptical incisions removed a mass of skin, fat, and sac about eight inches vertically and six inches transversely. The sac contained a large mass of thick, adherent omentum. It was removed up to the margin of the hernial opening, which was three inches in diameter, and was firmly closed by coils of small intestine and omentum. Some recent ones were reduced, but there was a mass of small intestines about two inches wide at the hernial ring that widened out fan shape to about six inches at the distal border, which was about five inches from the ring. This mass was composed of coils of small intestines entirely adherent to each other so firmly that their individual outlines could not be distinguished. The mass was

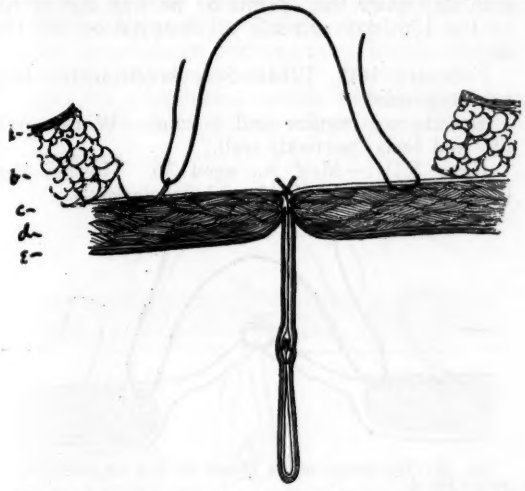


Fig. 7. Suture No. 2 has been tied and the muscle edges of the hernial orifice brought together. Suture No. 3 is shown in place.

about an inch and a half in thickness. To separate the several coils of intestine was impossible, neither was it desirable, for there would be so much raw surface left that it could not be covered in. Resection and anastomosis was undesirable for the added risk of infection and prolonged operation. Therefore, I acted on the plan that these coils had been so many years in such close relation that they were accustomed to act in that relationship and would act again if the conditions were favorable. The hernial ring was split, this *fan-shaped mass was reduced en masse* and placed in position behind the orifice. Above it was the stump of the omentum, about four inches across and about half to an inch thick. The peritoneum was closed with No. 2 plain gut. Two rows of mattrass sutures of kangaroo were placed to invert the wall and then four retention sutures of double Pagenstecher, tied over rolls of gauze to take the strain off the other sutures.

A rubber tissue drain was placed in the wound and the skin closed with plain gut. The wound healed per primam. The drain was out in a week. The retention sutures in two weeks. The patient was out of bed in three weeks and outdoors in a month. The bowels acted from the second day, without pain the first time in 20 years the patient said.

The patient seen in August. Scar smooth, eight or nine inches long. Abdomen firm, smooth, and painless. A perfect result. Patient gaining in weight and strength. Doing work about the house. Bowels act daily without cathartics.

Attention is called here to the deliberate reduction *en masse* of a large matted bulk of small intestines and the perfect functional result that was obtained in the intestines in spite of such an unfavorable condition.

I would not advocate the reduction of such masses of adherent intestines except in unusual circumstances. The pressure of the truss for many years had been responsible for this condition as

Fig. 8. Suture No. 3 has been tied and the surfaces of the fascia over a wide area have been brought in firm contact. This last suture rolls inward the edges of the muscles forming the hernial orifice. A figure-of-eight retention suture is shown in position, to be tied over rolls of gauze; and the skin edges coaptated by a last stitch.

well as the inflammation following repeated attacks of strangulation and obstruction in the hernia. My reasoning was that these loops of intestine had been in this position and had functionated, with difficulty, for many years, and that there was a compensatory arrangement on the patient's part to overcome this condition and that if the immediate obstruction was removed we could expect that the function of the intestine might be restored to at least its previous condition. A resection was not advisable, for I felt that to add this to the excess of trauma already experienced by the patient during the preceding few days would be more than she could stand. I had rather have a living patient with some difficulty in intestinal function than a dead one with a "perfect resection and anastomosis." The result was such a great surprise in the perfect restoration of bowel function without arti-

ficial means that I deem it justifiable to make this extended note upon the case.

CASE XII:—Mr. A. O'T., aged 38 years. Harlem Hospital, admitted September 13, 1913. Discharged October 9, 1913.

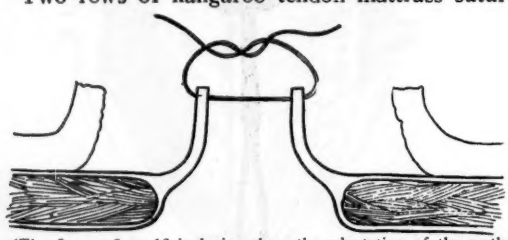
Two and a half years ago was operated upon for a ruptured appendix with abscess. Wound had to be drained for a long time and healing was slow. Patient was under treatment for two months.

Present trouble began three months ago when he noticed a swelling in the scar. This has been rapidly growing larger, but gives no trouble except from its size.

Examination shows a large protruding abdomen with weak abdominal walls. There is a long oblique scar across the abdomen at the right of the umbilicus. This scar is over a large, irregular, ventral hernia which has numerous extensions. Most of the hernia is reducible and there are two or three orifices felt leading into the abdominal cavity.

Operation, September 20, 1913. Two incisions about eight inches long enclosing an elliptical mass of skin and sac were made and the enclosed mass excised. This disclosed a herna through a gap five inches long and two inches wide, with the omentum and intestines adherent in several places to the sac. The omeuntum was excised, the intestines dissected free, and the raw surface covered with omental flaps. The edges of the sac with the excised omentum in between were sutured together with interlocking sutures of No. 2 plain gut doubled.

Two rows of kangaroo tendon mattrass sutures



(The figures 9 to 12 inclusive show the adaptation of the method to the case where the sac has been opened.)
Fig. 9. The introduction of the first suture.

rolled in the margins of the hernia and the adjoining edges of the abdominal wall for more than an inch. Four retention sutures of double strands of silkworm gut placed in a figure-of-eight manner were inserted at a wide distance from the skin incision and still further inverted the fascial margins. The skin was closed by plain gut over a rubber tissue drain.

The drain was removed entirely, at several stages, by the 29th. Primary union. The retention sutures were removed on the 13th day after the operation. Patient was out of bed on the 16th and discharged cured with a solid scar on the 19th day after the operation.

The highest temperature was 100.8° on the fourth day after the operation. The bowels moved every day, including the day of operation, until the patient left the hospital.

February 28, 1914.—Seen by myself. Scar is eight inches long, perfectly firm. Man works every day as a flagman and switchman. Feels perfectly well. Bowels have acted normally every day. Says he feels fine.

CASE XIII:—Mr. J., 50 years of age. Red Cross Hospital. Admitted October 14. Discharged October 29, 1913.

Was operated upon 15 years ago for an attack of appendicitis.

About two years after the operation patient suddenly felt something give away in the region of the wound and since that time has been suffering more or less with stabbing pain more or less severe.

Examination shows a post-operative ventral hernia of moderate size, four inches in length by two inches wide.

Through two six-inch incisions the steps of the inversion method were carried out. The sac was opened and the intestines were found non-adherent to it.

Suturing done as described in other cases.

Bowels moved on the fourth day and daily thereafter.

The retention sutures were removed on the eleventh day after the operation; he was out of bed on the 13th day and left the hospital on the 15th day.

February 16th, 1914.—Scar seven inches long, perfectly solid.

Bowels are regular and normal. Works every day and feels "perfectly well."

CASE XIV:—Mrs. A., aged 36. Harlem Hospital, December 13, 1913. Housework.

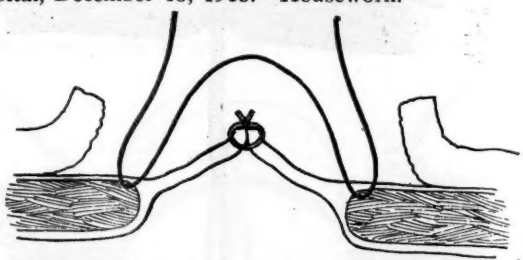


Fig. 10. The closure of the hernial sac and the introduction of suture No. 2.

Has had two children, full term, normal delivery.

In 1902 was operated upon at one of the city hospital for "internal trouble," and six years later was again operated upon for some abdominal trouble.

Appetite poor, bowels constipated. Frequent nocturnal urination. Habits good.

During the past three years has marked a swelling in the left lower part of the abdomen, which has steadily increased in size. This pains her occasionally, but she has never had attacks of vomiting. Examination is negative except for a large ventral hernia at the site of an abdominal scar between the umbilicus and symphysis. This is about the size of two fists and at the left of the midline.

Diagnosis: Ventral hernia, post-operative, of the dissecting variety. It is easily reducible and there is an orifice one and one-half by two inches.

Operation, December 16th. On exposing the hernial sac by two elliptical incisions six inches long a typical dissecting ventral hernia with several chambers was found. The sac was opened in one

or two places and was found free from adhesions to the viscera. As the entire scar line was weak above and below the hernial orifice it was inverted with the hernial sac by two superimposed lines of kangaroo mattrass sutures, the line of infolding being about six inches long. Silkworm gut, double, retention sutures in a figure-of-eight manner, four in number, were placed and tied over pledgets of gauze. A rubber tissue superficial drainage wick was placed in the wound and the skin closed with No. 1 plain gut.

Convalescence was smooth. Patient left the hospital at the end of four weeks.

January 31, 1914.—Reported for observation. Result perfect at this date. Bowels acting normally.

February 17.—Scar six inches long, solid. Bowels regular.

SUMMARY: Size of openings. (Cases I to VII inclusive are from my first series.)

CASE I:—Eight by four inches with an anterior protrusion of four or five inches beyond the level of the abdominal wall. Result, cured.

CASE II:—"Large post-operative hernia through a scar for gallstone operation." Cured.

CASE III:—Umbilical hernia of moderate size with two linea alba defects above it requiring the inversion of about six inches of abdominal wall. Result, cured.

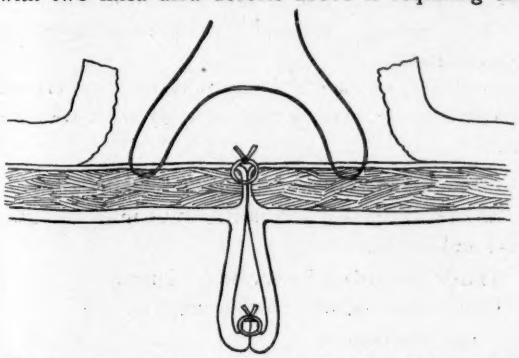


Fig. 11. Suture No. 2 has been tied with the result of coaptating the edges of the hernial orifice, and suture No. 3 is inserted.

CASE IV:—Umbilical hernia of moderate size. Cured.

CASE V:—A post-operative hernia as large as a grapefruit through an opening in the abdominal wall six by two inches. Cured.

CASE VI:—Small post-operative hernia. Cured.

CASE VII:—Immense hernia as large as the crown of a derby hat. A fibroid tumor was removed from this sac which measured six and one-half by four and one-half inches. The gap in the abdominal wall measured seven by four inches. Result, cured.

CASE VIII:—Umbilical hernia as large as a child's head through one opening two inches in diameter with two or three other smaller orifices adjacent to it. An area over six by two inches had to be inverted. Intestinal rupture, fecal fistula. Cured.

CASE IX:—Post-operative hernia through a gap five by four inches. Cured.

CASE X:—Immense post-operative hernia through a gap six by three inches. Cured.

CASE XI:—Very large umbilical hernia through an orifice about three inches in diameter. This had to be enlarged four inches to reduce a great mass of small intestines. Result, cured.

CASE XII:—Post-operative hernia through a gap five by two inches. Cured.

CASE XIII:—Post-operative hernia through an opening four by two inches. Cured.

CASE XIV:—Post-operative hernia through several places in a weak scar about five inches long. The entire extent of the old scar had to be inverted, an area of about six by two inches. Cured.

Fourteen cases, all cured.

Six cases may properly be termed giant hernia. The others were either large or ordinary and operated by this method to demonstrate its applicability to any form of ventral hernia, post-operative or umbilical.

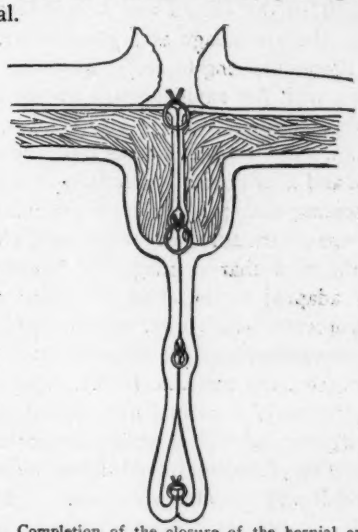


Fig. 12. Completion of the closure of the hernial opening. The skin (and fat) are to be sutured as depicted in Fig. 8.

Primary union in twelve cases. Superficial suppuration in one case, skin only. Fecal fistula, fascial necrosis, and protracted convalescence in another. Hernia cured in both.

No post-operative complication in any case from increase of intra-abdominal tension. Bowels acted spontaneously or easily from assistance on the second to fourth day. And regularly thereafter. No intestinal damage from insertion of sutures.

With these results I can confidently recommend the inversion method for treating these giant and also smaller ventral hernia.

107 W. 85TH ST

URETHROSCOPY.

The urethroscope is occasionally of service in entering excentrically placed openings in cases where the caliber of the urethra anterior to the stricture will permit of its use. The injection of the suprarenal preparations has at times acted nicely by their constricting effect on the bloodvessels, making it possible to get a small instrument through where nothing could be made to pass before.—R. W. STALEY in *The Lancet-Clinic*.

MASSAGE AND MOVEMENTS FOR CERTAIN AFFECTIONS OF MUSCLES AND LIGAMENTS.*

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In urging a broader field for massage and movements, I would emphasize that they are not a cure-all, but are valuable aids for certain conditions. Their earlier neglect gave a sound plank to the rotten ships of charlatanism and cults, from bone-setters to their modern representatives. In abandoning certain patients to that chance fate, are we not leaving undone some of those things we ought ourselves to have done?

On a visit to the clinics and hospitals of New York City where massage and passive movements are used, it was pleasing to see so much good work being done, with the rapid growth of the applications of physical therapy in the last few years, even months, or weeks. Especially was this true of some orthopedic and neurological institutions. It is, however, surprising that priority so limits massage to the treatment of fractures in our surgical clinics, in spite of the fact that massage, "a kneading," is essentially adapted to muscular structures and accessible ligaments, which offer a great field—as do also some disturbances of the digestive tract, peripheral nerves, etc., not germane to this paper.

Massage is mainly manual and should naturally interest surgeons, who work with their hands; even a little practice giving increased delicacy and firmness of touch and the ability to detect indurations or atrophies of muscles, tender points of spinal exit or peripheral distribution of nerves.

Massage is rarely taught in our colleges, which results in indifferent knowledge and interest, restricts the physiological application, tends to make it a last, rather than an early, resort, and delays the standardization of masseurs. Some of us may not have even read one good book on the subject, as that of Graham, Dowse, Kleen, or Despard.

It is well known that muscle and ligament affections are often precursors of deformity, notably the deformities of flat-foot, lateral curvature, post-infantile paralysis, etc. Pre-deformity is a natural branch of prophylactic surgery, whose growth should emulate prophylactic medicine. When thousands of surgeons, instead of comparatively few orthopedists and neurologists, efficiently treat muscle and ligament affections, intractable deformities will be much rarer.

The importance of massage and movement for impaired nutrition or function of muscles and ligaments is the basis of this paper. In health, function and nutrition go hand in hand. Injury or disease, in interfering with one, impairs the other. The muscles have been termed the peripheral heart. In contraction, the serum is squeezed from the lymph spaces to the lymph channels, from the capillaries to the venules and veins. Most lymph vessels and veins having valves, their contents when centripetally advanced, cannot return. On relaxation, fresh blood and serum are supplied, and nutriment is given, excrement having been removed. The ligaments in functioning, aided by adjacent tendons, act similarly, but passively.

Each massaging hand, about the size of the heart, has been compared to a peripheral heart, and stimulates muscular contraction. Passive motion more affecting ligaments and tendons parallels their function. Active and free motions combine the benefits of both.

Thus briefly do massages and movements aid impaired nutrition and function, hasten repair, and break the vicious cycle of injury, or disease.

One warning: massage is contra-indicated in acute infection.

In this short article I can only mention certain conditions and cases, but let us apply what we have to:

First: Traumatism of ligaments and muscles.

Second: Function and nutrition of muscles (general and local).

Third: Disturbed innervation of muscles.

Under traumatisms considering:

(a) Contusions.
(b) Ruptured muscle fibers.
(c) Myositis; and,
(d) Sprains.

(a) *Contusions.*—On receiving a blow the first natural impulse is to rub the part. Nature is right. Continued gentle centrifugal stroking obtunds sensation, and tends to remove the effused serum or blood, to prevent congestion and swelling, interfering with the return circulation; while with diminished or abolished tenderness, kneading gives nutriment for repair of the damaged tissues. As we all know, the tender point of a contused ligament is often persistently annoying; massage for this will bring prompt relief. So it will for contused muscles, with or without ruptured fibers. Here, tenderness may be exquisite, making it necessary to proceed very slowly and gently, with repeated treatments, but the results are most pleasing, as the following recent cases illustrate:

Mrs. T. E., four weeks previous to coming to the

*Read before the Surgical Section, N. Y. Academy of Medicine, March 6, 1914.

clinic, fell on the floor, injuring her right buttock. There was considerable discoloration, which disappeared later; she was unable to walk properly and could not lie on the injured side. Induration, six inches in diameter, of the right gluteus maximus with a very tender point near its center, was found. A diagnosis was made of contusion of the right buttock with rupture of muscle fibers of the gluteus maximus, and local massage and vibration were given in four treatments, December 19 to 31, 1913, when all symptoms had disappeared, function was perfect, and she was discharged cured.

Mrs. E. D., two weeks previous to coming to the clinic, fell down a flight of stone stairs, bruising her left buttock, injuring muscles of the left lumbar region, and was momentarily unconscious. Since then the muscles have been exquisitely tender and painful. There was a tender, indurated area, two inches by four inches, with a point of exquisite tenderness near its center, involving the latissimus dorsi and a similar area about the size of one's hand in the left gluteus maximus. A diagnosis of contusion and ruptured fibers of these muscles was made and massage and vibration given in four treatments, December 26 to 31, 1913, inclusive, when all tenderness and induration had disappeared. She, however, returned January 12, complaining of pain over the lesser sciatic nerve, where points of tenderness were found. Late pregnancy has since prevented further treatment for the injury to the nerve, but the case illustrates the effective *cure in four treatments* of contusions and ruptured fibers of the muscles.

(b) *Simple rupture of muscle fibers* is often followed by painful muscle spasm, immediately, or on attempted function. Massage is generally most effective in muscle spasm, besides its curative action, in this condition, which may be shown by the case of

G. M. The day before coming to the clinic, when pulling heavily on a large wrench, felt a sharp pain in the back of the right shoulder, which almost completely disabled it. He complained of pain on moving the head and right shoulder. Tenderness and induration of the humeral fibers of the right trapezius were found, and a diagnosis of ruptured muscle fibers made. Local massage and vibration were given December 1 and 3, when the symptoms had disappeared, function seemed perfect, and he returned to work cured.

(c) *Myositis,* often termed muscular rheumatism, closely resembles the above. It frequently follows a forgotten strain or injury, is oftenest located in the lumbar, deltoid, or trapezius muscles, those most liable to strain, generally has tenderness with loss of power, commonly severe pain on attempted function, and often indurated areas. It also responds well to massage, as may be illustrated by the following deltoid and trapezius cases:

W. G. had previously sustained a fracture of the clavicle, completely united. For several months previous to coming to the clinic he had suffered severe pain in the left shoulder, recently so severe that he would have to walk the floor every night. There were tenderness of the deltoid, and almost complete inability to raise the arm, as he was obliged to use the other in endeavoring to do so. A diagnosis of myositis of the deltoid was made and the old fracture of the clavicle was noted. Local massage and vibration were given on that date, with practically complete relief. He returned two days later to report himself well, when he received another treatment, was discharged cured, and has remained so since.

J. B., who for months before coming to the clinic had had tenderness of the right posterior portion of the neck, and pain on moving the head, without history of injury, showed induration and points of tenderness in the humeral portion of the trapezius. Diagnosis, myositis of the trapezius. Local massage and vibration were given that day with so much relief that the patient returned to work, discharging himself cured.

Though some cases take longer than these, the results are usually satisfactory.

(d) *Sprains.*—Here ruptured ligamentous fibers, and often effusion of the joint, are added to the conditions of ligament contusion. When any bony attachment of a ligament is torn away, the sprain is best classed and considered with fractures. Effusion in the larger joints, knee, and shoulder is perhaps better considered with affections of joints, and preliminary immobilization may be advisable. In the smaller joints, however (ankle, elbow, wrist, phalanges, etc.), effusion in sprain reacts wonderfully to immediate massage, as I can testify to both as patient and as surgeon.

Last spring I was thrown forward by tripping on going upstairs, the weight being received on the right hand and wrist, which soon became very painful and practically useless. Three hours later there were swelling, effusion in the joint, and exquisite tenderness over the external lateral ligament. One massage treatment largely relieved pain and allowed considerable use of the hand. Three massages in 48 hours cured the injury. Ill-luck later occurred on the first afternoon's tennis game. In stopping suddenly the toe caught, the foot turned under, and a severe sprain of the right external lateral ligament and tarsus was sustained. Next morning the ankle and foot were swollen, ecchymotic, extremely tender and painful, scarcely to be moved, and unequal to bearing any weight, with exquisite tenderness over the external lateral ligament and tarsus, and effusion of the joint. Massage and passive movements were given four times within three days, when all symptoms had disappeared. Strapping was then applied, however, to afford good union to the fibers and prevent repetition of the injury.

E. S.; on November 26, 1913, about 1 P. M., slipped on the stairs and injured her right ankle. She was unable to bear her weight upon the foot and was brought to the clinic in a carriage at 2 P. M., and on leaving was almost carried by two

friends. The right ankle was found to be very tender and much swollen. There were effusion in the joint and points of exquisite tenderness over the external lateral ligament, with sickening pain, when it was put on the stretch. The patient was hardly able to put the foot to the floor and unable to bear her weight upon it. Diagnosis, sprained ankle, especially of the external lateral ligament. Massage, followed by passive movements, were given. The patient was sent home to bed, where another treatment was given that night and the next day, when she was told to return to the clinic, which she did the following day, walking without perceptible limp. Massage, passive and active motions were again employed, and as the patient felt perfectly well, the ankle was strapped to afford good union to any ruptured fibers, and protect against subsequent injury. She was told to return in two or three weeks for removal of the straps and final examination. As she was cured, she later removed the straps herself, and it is interesting to note that the intermediate day being a holiday, by this treatment only a part of two days was lost from her work, a real consideration to herself and her employer.

J. L., one week before coming to the clinic, while playing basket ball, stepped on another's foot and wrench his own. A few days later he found difficulty in walking, which steadily increased, so that, as he expressed it, he was almost dragging his foot when he came for treatment. There was a tender spot over the external aspect of the fifth tarso-metatarsal joint with pain on putting the ligament on the stretch. Diagnosis, sprained tarsus.

Massage and vibration were applied, and the foot strapped. He was told to report three days later. This he did, though feeling perfectly well, so no treatment was given. Later he removed the straps himself, and despite being on his feet nearly all day every day, he has felt no discomfort since.

E. H., sprained wrist, with effusion in the joints similar to my own, cured in four treatments.

F. P., sprained elbow, smilarly cured in two treatments.

These few citations show sprains completely cured in usually about as many days as weeks were required by rest treatment. Strapping, in allowing function, was a great advance, and massage, in aiding both nutrition and function, is its natural complement, and is always an advantage preceding, or with strapping.

The advantage of prompt treatment, as diminishing the time required for cure, is also shown. Slight tarsal sprains often become worse without treatment, paralleling weak-foot.

II. NUTRITION AND FUNCTIONS OF MUSCLES.

(a) *General effects.*—Zabludowski found in man that after severe exercise a rest of fifteen minutes brought about no essential recovery, while after massage for the same period the exercise was more than doubled, showing prompter recovery from fatigue.

Professor Maggiora of Turin also showed that muscles concerned in a special movement could do twice as much work after a few minutes' massage, as without it, *i.e.*, increased power for sustained exertion. The details are given by Graham. The voluntary muscles should comprise about half the body weight, and receive one-quarter the amount of the blood, so that the profound secret of their well-being on the general system is readily inferred. The medical aspects may not interest us, but Pool has recently shown the benefits of certain systematic exercise in post-operative treatment, and quotes Kleinschmidt, Krecke, and Henle as similarly advocating exercises and massage. It would seem reasonable that they might also be of value in the pre-operative or preparatory treatment of certain cases.

Its effect in impaired development and function of muscles may be shown by the case of

B. D., ungraded school boy of ten, referred by Dr. W. B. Noyes, of the neurological department, with a diagnosis of cerebral and cerebellar diplegia, manifest in impaired brain and muscular function, whose case must be summarized. He was constantly falling down, went upstairs one step at a time, would drop any bundle he attempted to carry from weakness of hands and arms, and was dropped from school as dull and undisciplined.

He was a thin, rather pale, dull looking boy, small for his age, with high arched palate and very irregular teeth, articulation difficult and indistinct, extremely small, flabby and weak muscles throughout, of weak, uncertain gait, weak hands and arms, some joints of fingers capable of great hyper-extension, lack of muscular development being especially evident. Now (about three months later) his color is fairly good, he looks much brighter, especially in his eyes, has gained flesh, and his muscles have gained in size and consistency. He walks steadily, runs well, goes upstairs normally without even grasping the balustrade, can carry bundles of considerable weight a reasonable distance, as about ten pounds half a mile, and lays them down when tired. He talks much more distinctly and his mental condition seems somewhat better, showing both muscular and general improvement.

(b) *Local effects.*—In health there is a state of muscular equilibrium of opponents; this is maintained, within limits, by extra work, giving extra nutriment and causing muscular development of the weaker. But beyond these limits in impaired nutrition and function, the weak relaxed muscle becomes stretched, with further impairment, in the opponent contracted ligament contracture follows, and even bony deformity. Likewise in poorly nourished, over-stretched ligaments, nutrition is hampered, and diminished function with pain may result. Massage may aid relaxed muscles to regain their tone, especially when over-stretching is pre-

vented; and contracted muscles to a limited degree may be stretched. An anesthetic for breaking down adhesions, or tenotomy for a contracted muscle, may be preferable, however, to massage and movements alone, but either is aided by subsequent manual treatment. Similarly relaxed ligaments, through increased nourishment, especially with adjacent tendons aiding through development of their muscles, may regain normal function, and contractured ligaments may be elongated; with the apparent anomaly of both relaxed and contractured ligaments and muscles being benefited by like treatment. The common conditions of weak-foot and flat-foot well illustrate some of these conditions:

A. R., 50, stock exchange floor member. Though formerly a long-distance runner, for some months had had severe pain in the feet, after prolonged standing or walking. Examination showed tenderness of the calcaneo-navicular ligaments; eversion of both feet; good-sized but flabby muscles of the calf; shortening the tendo Achilles; flexion, extension, abduction, and adduction diminished, especially of the left foot, though the arches were little if any flattened.

A diagnosis of double weak-foot was made, and massage, vibration, and resistive movements given, in ten treatments from December 6 to January 10, 1914, appropriate exercises having been taught and practiced, when the patient said he had had no discomfort for some time. The calf muscles then felt firm, the feet were practically normal, except a point of very slight tenderness over the left calcaneo-navicular ligament. This was strapped for about five days, since which time, despite standing for many hours a day, there have been no symptoms. He has been told, however, to continue his exercises for six months.

It is probably unnecessary to point out the bearing this has on weakened muscles and ligaments after immobilization, as in Pott's fracture, etc., or the enormous prevalence of weak-feet in school children, with liability to permanence and deformity, which surgical vigilance may forestall.

Mrs. M. B. came to the clinic, having suffered so many years from pain in her left foot and ankle, with difficulty in walking, that she could hardly recollect when she had not had it. Her condition was similar to that of A. R., except that there were great rigidity of the feet, flattened arches, and joint crepitus of the left ankle. Treatment was similar except for two weeks preliminary strapping, which diminished pain and tenderness. Forty treatments during about six months were required. This case illustrates a complicated and severe flat-foot, similarly cured, but requiring many months instead of weeks, on account of the deformity.

Such cases show *cure,* with restored function, not *relief,* dependent on continued use of apparatus, as plates, shoes, strapping, etc., and they must stand as illustrations for similar conditions elsewhere. Space forbids more than mention of relaxed or contractured ligaments and tendons of the knee or shoulder; the importance of exercises and massage especially in the pre-deformity stage of lateral curvature, etc.

III. DISTUBRED INNERVATION OF MUSCLES.

Obviously, innervation may be disturbed by peripheral, cord, or brain causes; which may be permanent and destroy the muscle, or temporary, with temporary abolition or impairment of function and nervous control of nutrition; thus directly and indirectly affecting both.

Here the affect is extreme. The muscle becomes flabby and smaller, muscle fibers degenerate; some axis cylinders deprived of ganglionic activity also degenerate; contractures, adhesions, etc., may develop; and associated with the involvement of many muscles all the tissues may be affected, with diminished growth and shortening of the limb. Early muscular response may have been fairly good; soon this is slow and feeble to stronger galvanic stimulation of the nerve and faradism; then these are lost, and direct galvanic stimulation with stronger currents is necessary, Anodic closure contraction being greater than cathodic; or reaction of degeneration is complete, when muscular response may be lost, and the muscle cannot respond to a perfect nerve impulse.

Meanwhile, should nerve centers have been involved, the pressure of congestion or effusion has disappeared, the majority of the cells are ready to resume their function; some are damaged, others may be destroyed; but here is an important point, nerve centers are associated, and apparently in a nerve trunk fibers go from one center to several associated muscles and a muscle receives fibers from several associated centers, so, though many cells be destroyed, all nervous control of a muscle may not have been lost, but simply diminished or in abeyance; thus it seems possible, and also from clinical experience, that certain cells may vicariously take up functions of destroyed cells, while many believe muscular function hastens completion of nervous control.

Natural indications, then, are to:

(a) Early combat atrophy with nourishment (to prevent serious muscle damage and allow response to earliest nerve impulses).

(b) Encourage function and improve it by education.

(c) Encourage regenerating axis cylinders.

(d) Avoid interference with function in obviating deformity, though a destroyed muscle may demand tendon transplant. (Lovett's admirable de-

scription in his anterior poliomyelitis articles were seen after writing the above; brevity leads us to let ours remain, giving due credit, and accepting responsibility for differences.)

In practice the rule holds that peripheral lesions, with restored conductivity, are more amenable than central ones, as is evident in birth palsies; but reasonable promptness in hemiplegia may save starving tissues.

Mrs. G. is an instance of function aided by massage after restored peripheral continuity. Briefly, she ruptured the right brachial plexus by falling out of a window December 18, 1912, the arm, forearm, and hand being almost completely paralyzed. She came to me six weeks later, when a diagnosis was made and Dr. Alfred Taylor sutured the nerves at the Neurological Institute; there was some massage given, but the patient became discouraged and gave up treatment. Hearing of this October 15 she was sent for and function found practically the same as before operation, but with massage she now uses all the muscles, cooks and dresses herself, the main weakness being in the deltoid.

In cord lesions, though, there are very pleasing results from newer treatment and the educative exercises of locomotor ataxics, etc., massage and movements are very helpful.

Affects of anterior poliomyelitis on muscles and ligaments better illustrates results of massage and movements, as shown in hundreds of Lovett's cases and those of Fraser of Rockefeller Institute soon to appear, including management of the early stage. However, as one of my cases is of ten years' standing, and an indication of methods in late stages might be of interest, I would summarize them in closing.

In 1903, feeling that the brace, while endeavoring to prevent deformity, so severely interfered with function and nutrition, as to be generally unsatisfactory, I determined to substitute massage and function, endeavoring to foresee and obviate deformity by any other means possible.

This was done in the case of Lena B., age then five, of Waquoit, Mass., who was brought to me September 15, 1903. She had never been ill until two years before, when she had a chill, followed by fever, which lasted some days. Her legs were then found to be paralyzed and tender on pressure, though sensation was diminished, for about seven weeks. A diagnosis of anterior poliomyelitis was made, and she was brought to New York and treated at the Hospital for the Ruptured and Crippled Out-Patient Department with electricity for three or four weeks, with improvement, and a brace was fitted, after which her parents took her to Waquoit. In 1903, she was wearing the brace and I was consulted.

Examination showed three-fourths of an inch shortening of the left leg, with atrophy of the leg and thigh. Drop-foot was present so that the toe was dragged in walking with some inversion of the foot. Weak-foot was not apparent. The brace was removed, a laced shoe raised three-fourths of an inch was ordered (and this never had to be raised further). Massage twice a day with active motion and exercise ordered, and under this treatment there was steady improvement. The muscles developed up to those of the other limb, though it was a year or two before she was able to run normally. She is now taller and heavier than her mother. She wears a thicker sole on the affected side, but otherwise is entirely normal, running, dancing, ice skating, etc.

Subsequent cases strengthened this belief, and developed methods, so that after the acute stage, we now teach the mother to give the required massage twenty minutes night and morning. It is given at the clinic three times a week, with first passive, later active and resistive movements and special exercises; natural exercise is encouraged as soon as possible.

Where advisable we strap against stretching, of gravity, or too strongly opposing muscles, to help obviate deformity without interfering with function, the guiding principle of this muscle-strapping being, from origin to insertion of the muscle, the resultant line of force being in the line of the muscle's fibers; or the same principle, as in ligament strapping.

Massage may be given through strapping, or the plaster may be dissolved by xylol, etc. In the lower extremity the peronei and tibialis anticus are so often affected, causing weak-foot, that lace shoes adapted to this, and in heavier children a foot plate, may be ordered, with weak ankles a leather anklet, or leather side supports in the upper of the shoe are also ordered and possibly a rubber anklet might aid. With drop-foot in young children, Fraser has suggested an elastic band sewed to the junction of vamp and upper and held above with sufficient tension to raise the foot by a straight garter; in older children we use strapping, and ingenuity may suggest better methods. In shortening of a limb, the proper shoe is raised sufficiently. In the upper extremity and elsewhere the same principles are applied, all cases being carefully examined for lateral curvature which, if present, is treated by appropriate exercises and massage.

When even these indications are met, it is often surprising how well the children will walk and even run, how long after the attack, even years, we find muscles recovering function, encouraging the belief that with increased skill braces will rarely or never be required and tendon transplants less frequently.

Some recent illustrative cases cannot be given in extenso, but must be summarized.

R. W. showed similar improvement to Lena B., to practically complete function, roller skating about the neighborhood, but on stopping treatment with an uncured weak-foot and discarding his plate, he retrograded and resumed a brace, when impairment was rapid. Resumed treatment again shows improvement (rapid retrogression with brace, rapid improvement of functional method).

Arthur D.'s leg was similar to Lena B.'s, and his arm is rapidly improving. (Practically cured leg, almost cured arm.)

Patrick McC. showed marked improvement, with retrogression on abandoning treatment before cure, and so marked improvement on its resumption that we have great hopes for his recovery.

Florence B., referred by Dr. Fraser, was recommended by others to have a brace with its possibilities of harm, but by the above method he has good foot function, walking and running, and despite difficulties, this would lead us to believe in her probable recovery.

Helen O., also referred by Dr. Fraser, despite marked atrophy and disability of the shoulder muscles, showed prompt use of the hand after massage, and her improvement is encouraging.

CONCLUSIONS:

1. Increased nutrition and function are essential to the cure of many affections of muscles and ligaments.

2. In obviating deformity interference with function should be avoided.

3. Massage and movements are important aids to these ends, and should be much more generally used by surgeons.

"INNOCENT" GALL-STONES.

For years it was taught that gall-stones might exist without producing any symptoms whatever. This old theory was based upon the frequent discovery at autopsy of gall-stones in patients who had no history to point to their presence. The fallacy in this argument was that the patients were dead when the gall-stones were found, and could not be questioned about symptoms that might have existed and that might have been due to gall-bladder disease. In recent years, however, when gall-stones have been found unexpectedly at abdominal operations, later questioning has often elicited a history of chronic dyspepsia which had not seemed to have any relation to the gall-bladder, but which disappeared after the operation. Moynihan, in 1908, was one of the first to call attention to this, and to insist that gall-stones always cause symptoms, even though the latter are purely dyspeptic in character. He gave the name "inaugural" to these symptoms, which in his opinion may persist for years before their real cause is recognized.—WM. F. CHENEY, in the *Interstate Medical Journal.*

A PLEA FOR CATGUT AS A SKIN SUTURE.*

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The evolution and development of a surgical technic results from the combined experiences of many men, changed from time to time as the views and methods of individual operators are tested in the crucible of clinical practice, and adopted, modified, or rejected. All are desirous of attaining what is best and that which contributes to the comfort and safety of the patient.

In no field has there been greater activity than in the care and handling of the skin in its preparation before and its treatment during operation, as well as its closure afterward. The marked trend has been toward simplicity of method. The question of the absorbable vs. the non-absorbable suture has been much and vigorously discussed, and there has been a tendency upon the part of surgeons to eschew catgut.

The object of this short essay is to record my experience in the use of absorbable sutures, in order that it may contribute, however feebly, to draw attention to its many valuable features. No attempt will be made to present an argument based upon scientific bacteriological investigation, but only to draw attention to clinical results.

I have been for many years a consistent believer in the use of catgut sutures, to the exclusion practically of all others, except in intestinal work, and in that time I have tested this method in its various aspects thoroughly. The premise will be accepted by everyone that the ideal wound course is that of one made under aseptic conditions, closed with a suture that will be disposed of by the tissues and allowed to remain under its first dressing until complete healing has taken place. Under such circumstances, if no contamination has taken place at the time of operation, none can occur under the undisturbed dressing; while the converse is equally true that whenever exposure of the wound is made by change of dressing, bacteria may be admitted and infection take place. The withdrawing of a stitch at this time through the deeper tissues may result in deep infection. Such ideal wound healing can be obtained only by the use of catgut.

The objections to the use of an absorbable suture may, in the final analysis, be reduced to two, viz.: First, that the organic material may prove a suitable culture medium for the bacteria buried in the skin, resulting in wound infection and a stitch abscess. Second, that absorption may be too rapid,

*Read before the Southern Surgical and Gynecological Association, Atlanta, Ga., December 18, 1913.

and the edges of the wound be permitted to gape before complete union has taken place. It is my opinion that both of these can be safely eliminated. In a paper presented a number of years ago (*Transactions of the Medical Association of Georgia*) I advanced the claim that catgut became a safe suture just in proportion as skin disinfection stops short of skin traumatism, and the present tendency to simplicity of preparation bears out this claim. A skin that is scrubbed, scraped, washed, and soaked in strong chemicals is not in shape to take care of any kind of suture. Gentle washing of soap and water and alcohol, and when perfectly dry painting with tincture of iodine, seems to be the ideal method, as seen at present. Perhaps a dry shave and application of tincture of iodine on the table gives practically the same results. This application I make upon the operating table, after which washing away the iodine with alcohol. I mention this because it is claimed by many that iodine should be applied some time before the patient reaches the operating table. Hundreds of cases have demonstrated that two minutes is long enough clinically, even though it may not be so theoretically. Skin thus prepared will handle catgut without trouble, provided the proper size is employed in the proper manner.

The second objection can be met by using chromicized catgut, and after trying various sizes I have for the past two years employed the 00 chromicized gut practically exclusively. This is smaller than almost any other suture, and at the same time has enough tensile strength to hold the edges of the wound in coaptation. It should be remembered that skin sutures are for coaptation, and not for existing strain, and should there be unusual strain, as in breast amputations and removal of growths, there should be relaxation sutures, and perhaps a little larger chromicized catgut for the skin edges. The 00 chromicized suture will resist absorption in the skin for from seven to ten days without irritation or reddening.

Much depends upon the manner of placing catgut sutures. They should not be too closely placed or too tightly tied. Personally, I much prefer the continuous running suture, passing somewhat deeply into the subcutaneous fat, and taken at intervals of from one-half to three-fourths of an inch. Such a wound can be made to lie in perfect apposition, and at the same time can be pulled apart at any point, thus allowing free drainage by direct transudation between the wound edges. The serum thus exuded in drying out in the gauze makes an ideal splint for supporting the wound and should not be disturbed until healing is complete. Blood serum dried thus in the gauze makes a dressing practically impervious to air and water. With the exception of supporting sutures in abdominal incisions, all wounds in my experience for years have been closed thus with catgut. The deeper layers in abdominal incisions are usually brought together with the 00 chromicized catgut used in two strands, or a little larger size. In no wound does catgut behave more satisfactorily than in those in the scalp, though many have contended that it should not be here employed. In extensive incisions for operations upon the brain it has been my practice for years to use the continuous catgut suture, which does away with the necessity for ligating vessels in the scalp, at the same time permitting them to close perfectly under one dressing. In hernias, kangaroo tendon is used in the deeper layers, and catgut in the skin. The extensive suture lines of breast amputations are closed with catgut, and the dressing is usually removed from the sixth to the eighth day for the purpose of removing the drainage tube, in which time but little further dressing is required. Even scrotal incisions in varicocele receive the same treatment.

In conclusion, we may ask, how much does it not mean to the patient to know that no stitches have to be removed, no dressings changed, and that after being taken from the operating table, there are no more harrowing or disturbing processes to be put through? In the end, too, it means much less work for the surgeon, much less dressings for the hospital, and an ideal result.

THE SPECIAL VS. THE COMPLETE HOSPITAL.

With the "hospital unit" as our sole guide, the general hospital, with "a medical and a surgical side," and the special hospital, with its one-sided organization and its helplessness in the face of unexpected and complicated emergencies, pass muster as satisfactory hospitals; but, inasmuch as neither the general hospital which is composed exclusively of a medical and a surgical side nor the special hospital which is manned by a group of regional technicians, is prepared, in the treatment of its patients, to bring effectually to bear the combined resources of modern medicine, no hospital of either type should be created henceforth without a protest. And for the same reason existing hospital fragments, wherever and whenever possible, should be pieced together into whole and competent hospitals. —S. S. GOLDWATER in *The Modern Hospital.*

STRAIGHT DIRECT LARYNGOSCOPY, BRONCHOSCOPY AND ESOPHAGOSCOPY.

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BALTIMORE, MD.

(*Continued from May Number.*)

Brunings has devised a fixation instrument for attachment to his handlight which serves as a "counter-pressure" apparatus. After it is attached to the light, a broad metal piece is placed against the thyroid cartilage which is gradually forced back by means of a screw arrangement until a good view of the larynx is obtained. The advantages claimed for the contrivance are that it will work successfully in the most difficult case and the operator has both hands free. In his book he describes the method as follows: "The method of counter-pressure has for its object the diminution of autoscopic pressure, which, besides being an unavoidable inconvenience to the patient, limits the indications for direct laryngoscopy. Moreover, it renders possible the automatic continuation of the presentation of the larynx, and enables the operator to accomplish what has hitherto been impossible. As this method is important in practice and is quite new, a somewhat complete account of it is desirable. If the normal curve of autoscopic pressure (Fig. 16) is considered, the rapid rise of the section M-V, which in no wise corresponds with the progressive elasticity of organic tissues, is noticeable. There must therefore be some second factor at work in addition to the elastic resistance of the root of the tongue, which opposes itself to the gradual presentation of the larynx in proportion to the increased pressure. Exact measurements show that in all cases of autoscopy the larynx, and especially the prominentia laryngis, move forward by 0.5 to 1.5 centimetres, a movement which, in the main, coincides with the rapid increase of pressure from M-V. In reality, not only a dislocation of the entire larynx, but also a sagittal stretching and tension of the vocal cords is involved. For if the patient is made to omit a continuous sound while strong displacement is exerted, the note aimed at always turns out to be from a half to a whole turn too high. The reason that the larynx yields to the autoscopic spatula is to be found in its firm ligamentous connection with the hyoid bone, which transmits the displacement of the root of the tongue to it. If, therefore, by some special means this movement of the larynx can be prevented, the last 5 to 15 millimetres of displacement of the tongue will be saved, and the great increase of pressure necessary to produce it will be avoided. This auxiliary method can easily be so arranged that its application carries with it a further gain. By means of pressure in front exerted on the prominentia laryngis, the larynx can, without difficulty, be pushed from 5 to 10 millimetres farther back than the position which it normally occupies when the head is in the position required for direct laryngoscopy. If this displacement is added to the above, it must be possible, in specially favorable cases, to survey the entire larynx with a degree of autoscopic pressure which usually only brings into view the posterior wall. If the displacement necessary to bring into a straight line the angular passage between the upper row of teeth and the anterior commissure is remembered, it immediately becomes evident in what manner the counter-pressure can most advantageously be applied. Figure 17 represents graphically the three main features which are to be displaced (1, the teeth; 2, the root of the tongue; and 3, the larynx). The arrows show the direction in which displacement has to be effected. Now, if it is imagined that the counter-pressure at d operates on a prolongation of the electroscope handle v on the one hand and on the other hand on the larynx (3), it becomes plain that not only (3) is pressed backwards, but 2 is also pressed forward, as desired,

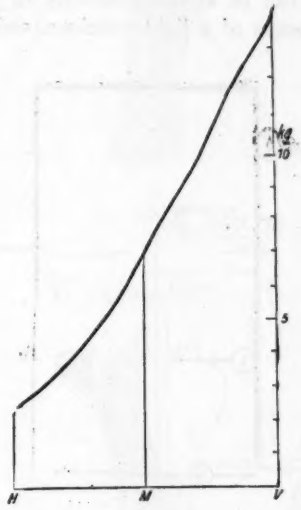

Fig. 16. After Brunings.

and 1 is pressed backwards, *i. e.*, through the counter-pressure the hand which holds the handle is relieved of work. At the same time the distribution of pressure, as indicated by the proportions of the lengths of the arrows, is favorable. One-half acts forwards on 2, and the other half, which is directed backwards, is distributed between 3 and 1 in the proportion of the lever lengths 2 to 3 and 2 to 1, so that 3 receives about one-third, and 1 about one-sixth, of the entire pressure. Figure 19 shows how counter-pressure is practically carried out. The counter-pressure instrument consists of a pressure plate which can be moved forward with one hand by means of a rod and a three-ringed handle. By turning the small lever a (Fig. 18), an automatic stop is inserted which causes the pressure plate to remain in any position required. This simple arrangement can be attached directly to the electroscope by means of a light envelope, and admits of both the employment of the autoscopy spatula for adults and also of the spatula for children. In the latter case the pressure plate is simply turned upwards, so that its upper edge coincides with the end of the spatula. The method of using the counter-pressure instrument is illustrated in Figure 19, and, after what has been already said, requires no more explanation. The beginner is advised to carry out his first autoscopic attempts without counter-pressure, in order that he may acquaint himself with the difficulties of the older method, and be able to judge what degrees of pressure are permissible; for with the help of the counter-pressure instrument a simple movement of the fingers enables him to exert an extraordinary force, for which at first he has no proper measure. If, indeed, autoscopy after Kirstein's plan is often a trial of strength on the part of the surgeon, so the counter-pressure method demands of him a corresponding sensitiveness of touch. The use of the counter-pressure autoscope does not in the first place differ from the normal procedure previously described. In the first stage the pressure rod must, of course, be completely withdrawn and, in the event of any difficulties of introduction, the pressure plate must be turned upwards. The second stage can only be carried out with some use of the counter-presser, which holds and directs the instrument. The beginner, however, is recommended to carry out the first part of autoscopic displacement without counter-pressure until the arytenoid cartilage is seen, and he has assured himself of the correct position of the spatula and knows how far to push it in, for only then will the pressure plate touch the right place, *i. e.*, the prominentia laryngis. It is obvious that all the rules applicable to the normal process of examination must also apply to the counter-pressure method. This applies also to the choice of a spatula of the right size, for the new method of examination is chiefly designed to make things pleasanter for the patient. I must now mention the advantages of counter-pressure autoscopy, which are partly capable of being mathematically demonstrated. For if the examination is first carried out normally with the dynamometric electroscope, and the counter-pressure instrument then applied to its handle, a saving of pressure amounting to 40 to 60% will result. Only when much thicker spatulae are employed is the same amount of pressure necessary as was previously required. This is a great alleviation for patients who are difficult to examine, since it is just the second half of the pressure which causes pain. In cases where autoscopy is easy of application, the field of vision is considerably enlarged, because in such cases it is possible to work with a larger tube. It is an essential feature of the counter-pressure method that its advantages are greater in proportion to the desire to approach from the posterior laryngeal wall to the anterior commissure, and so inflict greater pressure of displacement on the individual. As regards indications for use, it follows that in very easy subjects the counter-pressure instrument may be used for

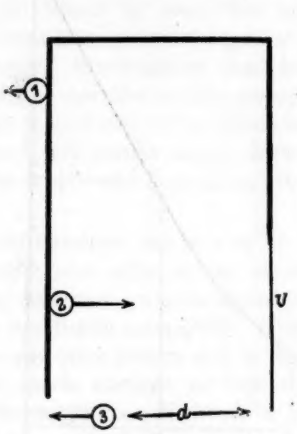

Fig. 17. After Brunings.

Fig. 18 After Brunings.

operations, demonstrations and lengthy procedures, and in moderate or difficult subjects it can be employed for brief diagnostic inspection. By this method I was able to remove a polypus situated on the anterior third of a man's vocal cord, although previously not even the posterior wall could be brought into view with an 8.5 millimetre tube. As I had not before come across a case in Killian's clinic so little amenable to autoscopy, it might almost be said that with the counter-pressure method the applicability of autoscopy can be reckoned at 100 per cent. A few months after the introduction of direct laryngoscopy, reports were made on the first laryngeal operations performed with this new method. Great hopes were held that autoscopy would introduce a new era of endolaryngeal therapeutics, because an organ which can be seen and reached directly has obviously a far better chance than if it is only visible as a reflected image in a mirror. This hope has not been entirely fulfilled, and the reason for this, as Kirstein had already remarked, is found chiefly in the fact that it is difficult to employ autoscopy and to operate at the same time. As a rule, two hands are required to bring the larynx into view, and if the instrument is to be used, one hand only, and that the left one, has to do all the work. This being the case, it is impossible to avoid pressing painfully on the teeth, and this makes the patient restless and easily spoils the view. If it is also remembered that the delicacy and fineness of movement of the right hand is considerably interfered with by the left hand being exerted simultaneously, then it is not surprising that even practiced users of the endoscope have hitherto preferred long curved forceps with the mirror to short straight instruments with the tube spatula. Soon after the introduction of autoscopy, various attempts were made to construct a self-holding autoscopic spatula tube. For instance, von Eicken had short tracheal tubes made with lateral windows for use with Kirstein's hypopharynx tube, and by this means he was able to present that part of the larynx which he wished to operate upon. I myself have worked some time with my "beaked tube," a half-open autoscopy spatula with a bayonet-shaped end, which offers a support to the instrument in the throat without reducing the field of view. The beak tube has been very extensively used, and is of great practical utility for small operations in the posterior laryngeal wall, such as galvano caustic punctures. But it fails like all other auxiliaries, in cases of operations on the vocal cords, more especially in the region of the anterior commissure. The main obstacle to direct endolaryngeal work is now overcome by the counter-pressure method. For, in addition to enlarging the field of view, it renders the presentation of the field of operation and the operation itself independent of each other, so that attention can be given to, and both hands used for, the latter. In spite of this there are still limitations to

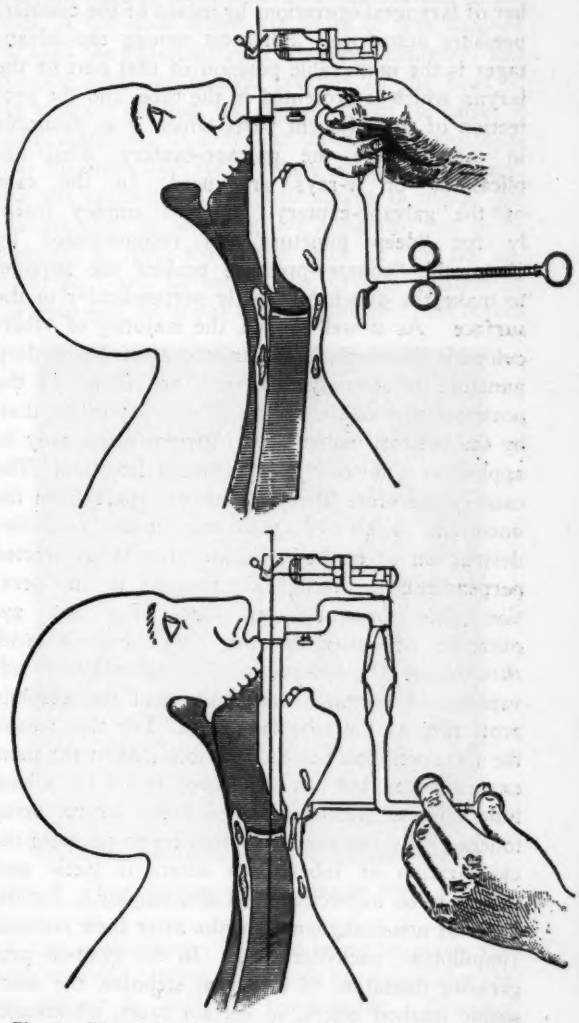

Fig. 19. The mode of action of the counter-pressure method—after Brunings.

direct surgical work on the larynx which I hoped in vain to overcome by means of a special operation autoscope. These limitations arise from two characteristic features of tube examination. In the first place, it is impossible to exert any considerable degree of lateral pressure with the end of a long thin instrument introduced through a tube, because the shaft has not enough play in the narrow tube. Secondly, the movements of the instrument in the direction of the tube are apt to be uncertain, be-

cause of the difficulty of judging depth with one eye only. As will be seen later on, it is possible to place against these unavoidable disadvantages such important advantages that direct operations have become an indispensable adjunct to the indirect method. I am accustomed to do the greater number of laryngeal operations by means of the counter-pressure autoscope. Foremost among the advantages is the immovable position of that part of the larynx which is presented in the tube, and the protection of the adjacent parts which is so desirable in cases where the galvano-cautery, local applications or *x*-rays are used. In the case of the galvano-cautery, which I employ mainly for "deep puncture" as recommended by Grunwald, "counter-pressure enables the surgeon to make the puncture exactly perpendicular to the surface. As is well known, the majority of tuberculous infiltrations, in the treatment of which deep puncture is strongly indicated, are found in the posterior part of the larynx in such a position that, by the indirect method, the instrument can only be applied in a more or less tangential direction. The cautery therefore always produces, apart from the uncertain depth of puncture, more extensive destruction of epithelium than when it is directed perpendicularly through the tube on to an operation field presented *en face*. For the application of other caustics (trichloracetic acid, chromic acid), autoscopy also affords the advantage of complete immobility and the absolute protection of the adjacent parts. For this reason the treatment can not only be localized in the most exact manner, but can be allowed to act for a long time without the other side of the larynx being touched. By this means I often try to promote the cicatrization of tuberculous ulcers if lactic acid proves to be ineffective, and also employ it for the bases of non-malignant growths after their removal (papillomas, pachydermias.) In the gradual progressive dilatation of laryngeal stenoses, the autoscopic method offers, in certain cases, advantages over the indirect procedure. It is especially advantageous in the case of young children, where it is impossible to use the mirror, and where the surgeon has consequently been obliged, hitherto, to introduce the dilator by feeling. As it is a question of overcoming considerable resistance, "bougieing" is only free from danger when controlled by the eye and this is rendered possible by the autoscopic method. For the stenosis treatment of young children, which is usually undertaken only after a previous low tracheotomy, I employ English urethral catheters, from the smallest size up to about 10 millimetres. The instrument is fitted with a stiff mandrin (either wire or steel wool carrier), and is then guided into the larynx, which has been previously cocainized; it is best to pass the catheter by the side of the tube as otherwise it interrupts the view. As the catheter is not easily bent, it is possible for considerable pressure to be exercised in a longitudinal direction. After overcoming the stenosis the mandrin is drawn out, and the flexible catheter allowed to remain in position for an hour. A rubber tube drawn over the catheter prevents it from being bitten. As soon as a certain lumen has been attained, the catheter can be passed with "half-autoscopy." By this I mean the prelaryngeal presentation of the epiglottis, which has been already fully described. If the lower 2 or 3 centimetres of the mandrin have been bent, it is easy

Fig. 20. Counter-pressure autoscopy (with telescope)—after Brunings.

then to carry the instrument under the accurate guidance of the eye round the epiglottis. In this way the larynx is readily entered, and a considerable pressure can be exerted. By this process I have overcome almost complete stenoses of the larynx and of the subglottic space, although this only succeeds where the stenosis is very short or diaphragmatic in form. The treatment must be extended, with increasing intervals, over a period of one year or more. In adults, autoscopic dilatation only comes into consideration for very narrow diaphragmatic stenoses, where the finest of the Schrotter catheters is unable to pass. In the dilatation treatment of laryngeal stenoses, due to scar tissue, I have never seen any improvement with fibrolysin. It may be mentioned here that, in peroral intuba-

tion by the O'Dwyer and the Kuhnt method, "half-autoscopy" may occasionally be employed to advantage."

The writer has quoted Brunings at length to show the difference between his methods and those advocated in this monograph; he has never used the counter-pressure apparatus and must therefore discuss it from Brunings' standpoint. It will be noted that he praises it particularly for operations in the anterior part of the larynx. With the methods of the writer, described above, it is never necessary to use an instrument to force the larynx backwards for the anterior commissure is always seen through the small instrument. The writer can conscientiously claim that with his methods, he has never failed to get a good view of the entire larynx at the first sitting except as stated above in one patient with chorea. He has repeatedly removed tumors in the anterior commissure which he believes would have been inaccessible by other methods. After such experiences, the writer feels that a complicated "counter-pressure" apparatus is not essential to successful work. His argument that two hands are, as a rule, required to bring the larynx into view is not borne out by the writer's experience. Formerly when large tubes were introduced between the incisor teeth, it was the rule to see only part of the larynx and successful operating was out of the question; with the small tube and the straight position of the head, this objection no longer holds true. The writer has repeatedly demonstrated that practically no force is exerted on the tube to see the anterior commissure and often the weight of the instrument almost seems to do this. All patients are easily examined with the writer's methods and operations are performed with ease. These criticisms are not directed at Brunings' particularly; the same objections apply to any method of direct laryngoscopy in which the tube is introduced between the incisor teeth. It will be noticed that his method of treating laryngeal stenosis differs materially from that suggested by the writer. It would seem that there could be no argument advanced in favor of intermittent dilatation when the continuous dilatation is so easily obtained with retained intubation tubes which in the hands of the writer has been so successful. In children particularly intermittent dilatation would seem far inferior to intubation tubes because the frequent treatments ought to upset the child's nervous mechanism. In the intubation treatment the tube is removed every two weeks; in the other treatment it is probable that dilatation is carried out oftener and it must be more painful than the former procedure. If one will notice the position of the head in Brunings' book for the supine and sitting positions, he will see at once what the writer has tried to emphasize throughout this chapter, that the head is too far back for easy work; in his position the head is thrown back on the muscles at the back of the neck which are more or less strained through the examination. When one compares this position with the natural position of the head in the straight position, the superiority of the latter is easily apparent. It is evident that the laryngoscopes that Brunings uses for ordinary work are too large, like the majority of the instruments in use at the present time, so an expensive apparatus has to be attached to force the larynx back so that the anterior part may be seen. The straight position of the head and the use of the 10 millimetre tube makes

Fig. 21. Direct operation on the larynx by means of counter-pressure autoscopy—after Brunings.

all this unnecessary; one can work in every case with ease and certainty and with the knowledge that his patient is perfectly comfortable. Brunings' book is the latest foreign work on this subject so his methods are referred to as the latest in use in Europe. It will be seen that the positions of the head do not vary much in Europe and in this country; they seem to be practically the same throughout the world and all have the common fault of forcing the head back and making much more difficult a procedure which should be one of the easiest in surgery. For these reasons it seemed to the writer that a monograph, describing the straight methods as originated by himself might not be out of place. A few days ago the writer had a patient from a neighboring city who had been hoarse for five years.

Examination with the mirror showed a tumor on the left vocal cord just at the anterior commissure—a position which is admittedly most difficult to operate upon. The larynx was deadened with 20% alypin solution and the small tube passed without difficulty. There was no trouble exposing the anterior commissure and in a few minutes the papilloma was shaved off with straight forceps passed down at right angles to the cord. The writer is sure that with any other tube the tumor could not have been as quickly and as easily removed. The patient had a short, thick neck and did not tolerate the tube well. It would have been impossible to use the Jackson large or small separable speculum. The writer does not report cases to exploit any special skill on his part but to emphasize the ease with which the small tube can be used. He knows, after having tried all sorts of instruments, that his modified tube has solved all the problems connected with direct laryngoscopy. With it most laryngologists see the entire larynx at the first attempt and a week's practice is all that is needed to perfect one in the use of the instrument. When the tube was exhibited at the meeting of the American Academy of Ophthalmology and Oto-Laryngology in August, 1912, and its advantages pointed out, there were some who thought it was too small; but if the writer succeeds in convincing a few laryngologists that one does not require a large tube for laryngeal work and that the disadvantages of the large tube far outweigh the advantages of the small one, he will feel fully repaid for the time spent in writing this little book. After all the only argument that can be advanced against a small tube is that one may not have sufficient room to see and to operate through at the same time. The answer is that one soon learns to operate as easily through the small as through the large tube. For diagnostic purposes there can be no argument against the smaller instrument because it is a self evident fact that it is more easily introduced. The writer's articles on the subject have been appearing for the past four years but only recently have laryngologists shown any desire to take up the straight method. That, once mastered, it will be used to exclusion of all other methods, the writer is certain because it is the easiest and most practical of all methods. This statement is made after a personal experience with all other methods and it can be substantiated by actual clinical work. In the operative cases cited above, it will be seen that the operative work embraces all parts of the larynx; that it is as easy to remove tumors from the anterior commissure and vocal cords as from the posterior commissure. No other instrument with which the writer is acquainted will allow this in every case. Success is largely due to the straight position of the head which the patient can tolerate indefinitely. In doing his work, the writer does not prefer any special table. Any operating table, high or low, will do and in different hospitals all kinds of tables have been used successfully. The writer has laid great stress on direct laryngoscopy because one must have a thorough knowledge of it if he would do bronchoscopy and esophagoscopy and because he deems it of the utmost necessity to emphasize the importance of learning the straight or easy as opposed to the extended or difficult methods. As this book is intended principally for beginners and has for its purpose the simplification of work which is generally considered difficult, these remarks are pertinent. In the next chapter on tracheo-bronchoscopy, the straight method will often be referred to for the writer uses it as the beginning of the passage of the bronchoscope in every case. The straight position of the head is insisted upon even in the examination of the upper end of the esophagus as being the cardinal principle of all tube work.

(To be continued.)

MILITARY SURGERY.

By GUSTAVUS M. BLECH,
CHICAGO.

(Continued from March issue.)

The majority of military surgeons are agreed that at the front the principal therapeutic measures to be instituted are:

(1) Absolute rest.

(2) Complete abstinence from food and drink for at least forty-eight hours; and

(3) Protection against infection.

In order to appreciate the difficulties which beset medical officers in the field, it is necessary to discuss the above-mentioned measures somewhat in detail.

Absolute rest.—A soldier shot in the abdomen by a jacketed bullet and left on the battlefield in a helpless condition without any attention for several hours has in all probability a better chance for recovery than the wounded who is at once picked up and carried some distance for surgical aid, provided, of course, no vessel of importance has been injured producing a serious internal hemorrhage.

The importance of rest for patients with abdominal wounds has caused several writers to advocate in all earnestness to leave them on the field and to detail hospital corps men to provide shelter and at-

tention for a time until it is felt that transportation is safe. If it be realized that the services of the sanitary personnel are strained to the utmost after an important engagement and that tactical situations may preclude the presence of non-combatants on the firing line, no proof is needed to show the impracticability of such a proposition.

Transport cannot be avoided, especially in winter time, but it must be reduced, as far as its harmful aspects are concerned, to the greatest possible extent.

The writer has taught the litter-bearers of his command to caution their patients to completely relax and remain passive while being lifted on the litters, to carry the loaded litters as gently as possible to the nearest station, and to undertake even that only after the administration of a liberal dose of morphin hypodermatically. In the event the drug cannot for some reason be injected under the skin it should be administered by mouth, even though this apparently violates the law not to administer a drop of water.

Morphin in gunshot wounds of the abdomen is what a splint is to a fractured extremity, and I am convinced that without it many wounded soldiers that have reached the field hospitals or dressing stations and made eventual recoveries would have died on the transport or soon after reaching its destination.

Complete abstinence from food and drink.—This must be followed explicitly. Most patients suffering from perforated gunshot wounds of the abdomen suffer intensely from thirst and beg pitifully for a swallow of water from the tempting canteen. I can find no better way of warning then to repeat the instructions I have given my men: "Any one of you who will yield to such pleadings is gambling with human life, and will be placed before a court-martial on a charge of murder."

Civilian surgeons will be apt to ridicule such drastic teachings to sanitary soldiers, who, it must not be forgotten, are laymen. How often have patients after laparotomies taken liberal quantities of water when not observed by the nurse and lived to laugh at our "science"? This has happened to me on two occasions and no peritonitis resulted. In one instance the patient vomited soon after the draught and had no further trouble whatever. In both cases the section was done for the removal of an acutely inflamed appendix.

But there is a vast difference between an aseptic wound by a surgeon's sharp knife producing a minimum of trauma to the tissues involved and a wound produced by a missile.

Statistics are easily forgotten and I will therefore restrict myself to narrating one instance during the Boer war in Africa which plainly illustrates my point.

An English medical officer and a line officer were shot through the abdomen, and an hour or so later found side by side by soldiers. The line officer begged for a drink and the canteen was placed against his lips. The same was handed the wounded surgeon, but though he suffered as much as his comrade, he remembered his teachings and energetically waved his would-be Samaritan aside. The doctor recovered—the line officer died, though both had similar injuries and were placed in the field hospital at the same time.

Protection against infection.—The small wounds of entrance and exit produced by jacketed bullets require a simple dressing such as is afforded by the sterile first-aid packet. Whether the wound margins should be painted with iodine, as is advocated by some writers, or let alone, is, in my opinion, of no moment.

Of greater importance is a recent contribution in the *Military Surgeon* by Col. Jacob Frank, Surgeon-General of Illinois, the well-known Chicago surgeon, who maintains that the treatment of covering the abdominal wounds with aseptic dressings is all wrong. Indeed, his idea is revolutionary in character.

Frank correctly maintains that when a man has been hit by a missile of small caliber it is not always possible to tell whether viscera have been perforated or not, in the absence of symptoms unmistakingly pointing to perforation. He demands that all abdominal gunshot wounds should be looked upon as perforating ones, as far at least as treatment is concerned, in order to run no risks of a false diagnosis. By applying a sterile dressing we protect the wound channel against infection from without, but at the same time we occlude the wound and allow the peritoneum to be overwhelmed by infection from within. He believes that the appearance of intestinal flora in the free peritoneal cavity plus the possible pouring out of intestinal contents will produce peritonitis in a very few hours. He further maintains that the reason so many soldiers have died after laparotomy in the fields hospitals is not to be found in the inability to perform this operation aseptically, but in the fact that the operation is performed too late.

Frank, basing on many animal experiments and his numerous observations in civil practice, advocates early drainage and is opposed to aseptic occlusion. His technic is simple. As early as possible

after receipt of injury the wound of entrance (exit, if the man is shot through the back, G.M.B.) is to be drained by the insertion of a piece of gauze wicking. If the wound is too small for the insertion, it should be enlarged with a sharp knife or dilated with artery forceps. The wick should be pushed into the abdominal cavity with some suitable blunt instrument. Frank recommends that one end of the first aid bandage be used as a wick (rolled as such between the fingers) and the rest used as an ordinary dressing or bandage which will prevent the wick from becoming lost in the abdominal cavity. He has so much faith in the efficacy of early drainage that in the absence of a regulation first aid packet he would not hesitate to use any ordinary piece of clean linen, such as a strip torn from a shirt.

Frank makes only one demand and that is that this treatment must be administered very early, not later than two hours after the occurrence of the injury. For this reason he advocates that all combatants should be given proper instruction, so that self help or help by a combatant comrade may be on hand on the firing line proper, if that cannot be reached by the sanitary personnel during the battle, a thing out of question under modern conditions of warfare.

It goes without saying that when sanitary personnel do reach the injured they should resort to the same method.

Frank believes that infection will be prevented or minimized by allowing the escape of all infectious matter, no matter of what character, and that in all perforations of the hollow viscera the transport will be robbed of its horrors, as the gases have an opportunity to escape, I presume, somewhat in the manner of an artificial fistula in excessive tympany, and distention of the bowels and stomach will be lessened thereby.

If I am permitted to comment somewhat on this teaching, I may say that theoretically at least the idea is sound. If it can be demonstrated by animal experiments—and this the writer will do in the near future—that the problem will work out in practice as well, then Colonel Frank will have rendered the science of military surgery a great service.

On first blush, it would seem that Frank is violating the law of "non nocere," as the rolling of the sterile gauze into a wick by dirty fingers—and in the field the fingers of all who cannot disinfect them will be dirty—but there is of course a great difference between dirt in the ordinary sense and infectious material, and Frank maintains that the endogenic infection by, let us say, the colon bacillus is so much more dangerous, that contact infection loses its significance, especially in view of the fact that the wound is left open for the purpose of drainage.

Of course even that danger could be eliminated to a great extent and even the very remote danger from tetanus, if the government would add a long piece of wicking and an applicator to the first aid outfit.

The principle of drainage is favored by practically all authorities when the external wounds are large.

The following general rules can be accepted as axiomatic for frontal aid stations:

(1) If the abdominal wound is large and the viscera do not protrude, gauze drainage is imperative. At the regimental aid stations it is best to tamponade such wounds preparatory to transport. Sutures of fascia, muscles, and skin can be undertaken at the dressing stations, where the facilities for emergency surgery are better.

(2) Prolapsed bowels, if not otherwise injured, should be cleansed with great gentleness by a piece of sterile gauze and returned to the abdominal cavity. It is imperative that all forcible manipulations of the prolapsed intestine be avoided. A simple and effective way to cause reduction is to separate and lift up the wound margins and to allow the bowels to fall back by gravitation. Occasionally the improvised Trendelenburg posture will be found helpful.

(3) In the event the prolapsed bowel is found to be injured, intestinal suture should not be undertaken at the front. It is best to secure the exposed bowel loops by means of a piece of gauze strip, so that they cannot escape back into the abdomen, and apply voluminous dressings, to protect against injury. Such patients should be sent to the rear with a special message indicating the nature of the injury where suture or resection can be performed in *lege artis*.

(*To be continued.*)

SURGICAL TRAUMA AND INFECTION.

The question frequently arises in the minds of operators why in two clean operations done for the same thing under similar circumstances one becomes badly infected and the other heals *per primam?* It is chance; the number and virulence of bacteria entering the wounds may be the same; the amount of damage done by the operations may be the same, the total resistance of the two patients may be the same, and still one may suppurate and the other heal. If a devitalization is done at point A and if the few bacteria admitted are lodged at point B, which is healthy, no infection occurs. But if they lodge at point A, the two factors necessary for infection meet, and infection cannot fail to follow.—W. A. BRYAN, in *The Southern Practitioner.*

NOTES ON A CASE OF ACUTE POST-OPERATIVE DILATATION OF THE STOMACH.

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CINCINNATI, O.

It is a fairly accurate observation that the less sharply defined our knowledge of the pathology or etiology of a lesion, so much greater is the mass of literature on the subject. Until a problem in pathogenesis is solved, however, each new fact or observation has a definite value, and should be reported. Therefore, the following case is related. Certain features are of interest, and the accompanying radiograph is, to the best of my knowledge, the first to be presented in reports of post-operative dilatation or atony of the stomach.

CASE:—A well-built, well-nourished white man, aged 18 years, was brought to the City Hospital, May 4, 1912, on the service of Dr. S. P. Kramer, with a stab-wound of the left side. He had had a fight, in the course of which he was stabbed from above downward with a "Barlow" pocket-knife. He had been drinking, but was not intoxicated.

His head, neck, and extremities were found normal, his heart sounds clear and strong. The right side of his chest was also normal. The abdomen was distinctly rigid over the upper and left quadrant, but only slightly sensitive.

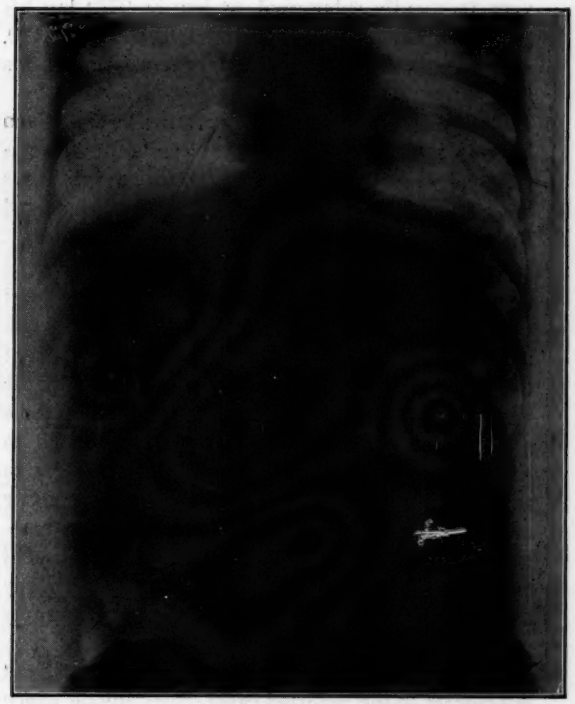
On the left side of the chest, in the tenth intercostal space and anterior axillary line was a small stab-wound, which undoubtedly penetrated the abdomen, for a small piece of omentum was seen protruding through the wound.

Expansion of the left chest was limited, but normal resonance seemed to be present and the breath-sounds were present over the whole lung, but not as clear and strong as on the right side. Temperature, 97.4°; pulse, 96; respiration, 24.

I saw the patient about one hour after his admission to the hospital, and because his wound evidently penetrated the abdomen, and because he had increasing abdominal rigidity and pain, I operated immediately:

Ether anesthesia, by drop method. Incision through left rectus sheath, in epigastric region, about four and one-half inches in length. The abdomen was thoroughly explored in the neighborhood of the upper left quadrant. The intestines were found distended, but no hemorrhage or visceral lesions were discovered. The omentum was replaced in its normal position, after removing the infected portion which protruded through the stab-wound. A drain was placed in the stab-wound and the laparotomy incision was closed. There was no rough manipulation of the viscera, no greater pulling or dragging upon mesenteric attachments than is usual in other intra-abdominal work. The patient returned to the ward in very good condition; he was given a hypodermatic injection of morphine, grain ¼, and he had a comfortable night. The morning after the operation he had a temperature of 98.8°, pulse 72, and respiration 20.

He continued in good condition until two days after operation, when he became restless and vomited four ounces of dark green material, thought by the nurse to be fragments of pickles. He was very noisy and begged for water, which was given him *ad libitum*. He complained of pain in his left



side and his temperature rose to 100°, pulse 104, respirations 30. Drain removed. His restlessness and thirst became very severe, and the vomiting occurred again, six ounces of the same greenish material. The interne gave him morphine, grain ¼, and he slept through the night. The third morning the vomiting and restlessness continued, and the vomitus assumed a fecal character, with a very foul odor. Urinalysis showed normal urine and he was voiding sufficient quantity. I found his abdomen great distended, but fairly soft and with no mass to be demonstrated, and tympanitic over the

whole extent, with no abnormal peristalsis; pulse 116, respirations 30. I ordered a turpentine enema given immediately, and the patient expelled a large amount of flatus, but no stool.

Fearing post-operative paralytic ileus, or acute dilatation of stomach, eserine salicylate and strychnine sulphate were ordered, together with gastric lavage. The orders in regard to the eserine and strychnine were assiduously carried out, but the lavage was entirely neglected.

The lad's appearance was not that of a desperately sick patient, but his vomiting, which now became very frequent, and the advent of severe hiccough, coupled with the abdominal distension which enemata and rectal tubes failed to relieve, provided a gloomy prognostic picture. At no time from now on did his temperature rise above 99.6°, running very frequently subnormal, as low as 97°; but his pulse rate continued elevated, between 90 and 120, usually over 100, until late in the course of his illness.

On the fifth day after his operation he was given bismuth subcarbonate, 2 ounces, in a bottle of bovilac, and his abdomen was *x*-rayed twelve hours later, by Dr. Sidney Lange, to whom I am indebted for the plate here reproduced.

The radiograph shows the condition very clearly. There had been absolutely no attempt on the part of the stomach to empty itself, and none of the bismuth has passed even beyond the cardiac half of the stomach. It lies in the concavity formed by the vertebrae and ribs of the left side, and the atonic gastric musculature has not had force enough to lift it over the vertebral volumn. There is gas in the intestines, but the sacculi of the large intestine are fairly sharply defined, and as the boy was passing flatus, it is fair to assume that the paresis did not involve the large intestine. On the sixth day the patient had a stool and from then on rapidly progressed to recovery.

In reviewing this case certain features stand out in contrast to the reported cases, chief among which are the discrepancy between the patient's appearance and the gravity of his symptoms, and the fact that the urinary secretion was undiminished.

The pathogenesis of this case would seem to fall under the neuropathic theory of grastic dilatation, inasmuch as we have here a diaphragmatic lesion in all probability involving either directly, or in its reparative process, some fibers of the solar plexus. That this lesion must have been of sonsiderable bacterial or mechanical irritability is evidenced by the rapid effort on the part of the omentum to wall it off, for even in the short time between the patient's injury and his admission to the hospital the omentum had worked itself into the wound. The occurrence of hiccough could be explained as phrenic nerve irritation, but the continued abdominal distension might also produce it in the absence of any such direct irritation.

Although this patient recovered with no treatment except eserine and strychnine and enemata, gastric lavage should never be omitted.

Indeed, if gastric lavage were used as a routine following all abdominal operations, performed either on the patient's return to the ward or, better still, while on the table, we would not only lessen the post-operative vomiting and discomfort, but in a large measure would also prevent the occurrence of post-operative dilatation of the stomach.

4 West Seventh St.

A Simple Reduction of Shoulder Dislocations.

My mode of procedure is the acme of simplicity, and is as follows: Having divested my patient of all clothing necessary—it is not always requisite to remove the vest and shirt—I place him on the ground in a sitting position and grasp the wrist of the injured side, the third party doing the same with the sound one. We then raise both arms straight above the head, taking care to keep them parallel, and extending them upwards till the patient is just raised from the ground, at which point a click is heard and felt and the dislocation is reduced without further manipulation, except that occasionally in cases of subscapular dislocation it may be necessary to slightly rotate the arm from right to left in the case of left, and from left to right in that of the right arm. These movements are, of course, carried out during extension.—Julius Caesar in *The Lancet.*

Painful Heel.

Painful heel is frequently due to an exostosis, a spur, on the bottom of the calcaneum. In cases of long standing rebellious pain under the heel, it is wise to radiograph in order to see whether this lesion is present. While we sometimes find this condition in patients complaining of no pain under the heel, it has been pretty well demonstrated that removal of these spurs when present in "painful heel," is followed by abatement of symptoms. Before, however, such spurs are removed, the attempt should be made to take pressure off from them by means of well-fitting arches, felt rings, or other devices designed to take weight off from the painful heel.—E. S. Geist, in *The Saint Paul Medical Journal.*

INSTRUMENTS FOR MEASURING JOINT MOVEMENTS AND DEFORMITIES IN FRACTURE TREATMENT.

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SYRACUSE, N. Y.

The instruments described below were evolved by the author in response to his own needs in fracture work.

While they have only an interest in curative value, they serve as a guide to the results of treatment; they are a source of intense interest to the patient in the progress of his case, and they constitute at least a step in the reduction of the treatment of fractures from the inexact art it has always been to the more exact science it is bound to become.

No figures are given of average measurements in a series of individuals because the instruments apply only to the extremities, of which there is usually a sound side that forms a better criterion of the normal motion of the injured member than does

Fig. 1.

that of the corresponding member of other individuals.

I. INSTRUMENT FOR MEASURING THE LATERAL MOVEMENTS OF THE ANKLE JOINT (FIG. 1).

A hinge (A), fitting into the groove between the external malleolus and calcaneum, is attached to a band (B) lying along the outer surface of the malleolus. Attached laterally at right angles to and centered to the hinge of this band is a quadrant (C). At the proximal end of the band is a socket (D), into which is set a rod (E) long enough to reach the calf. Near the proximal end of this rod is adjusted a shouldered piece (F), which sets against the postero-internal border of the tibia. The lower leaf of the hinge consists of a plate (G), which lies upon the lateral surface of the calcaneum. To the portion of the hinge (A) formed by the plate (G) is fixed a pointer (H), which indicates along the quadrant the degrees of movement as the foot is abducted and adducted.

II. INSTRUMENT FOR MEASURING THE FLEXION AND EXTENSION OF THE FOOT, ALSO THE POSITION OF THE FOOT WITH REGARD TO THE LEG, ANTERO-POSTERIORLY (FIG. 2).

The requisite parts of this instrument are: (1) a part for indicating the line of the leg; (2) a part for the line of the foot; and (3) a part for recording the movement between the first two.

The line of the leg is best taken along the postero-internal border of the tibial shaft and internal malleolus; the line of the foot between the ball of the heel and the ball of the great toe.

An appropriately shaped clasp (A) resting against the postero-internal border of the tibia at a given distance from the tuberosity, is adjusted to a longitudinal rod (B) lying along the groove between the internal malleolus and heel, snugly against the former. The second part consists of a

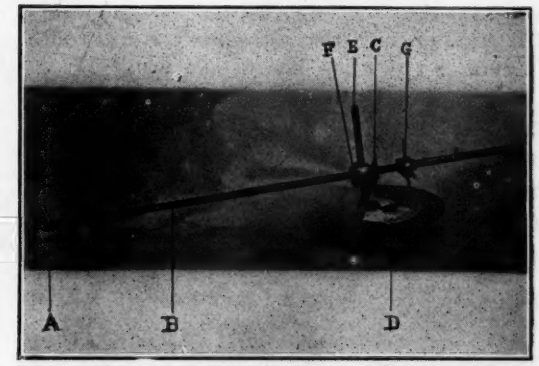

Fig. 2.

band (C) beneath the heel and toe. At right angles to this band is riveted a quadrant (D) centered to a second rod (E) held perpendicular to (B) by a double socket (F). The third part consists of a pointer (G) held parallel to the rod (E) by a socket similar to (F). As the second part revolves around the rod (E) the degrees of movement are indicated on the quadrant by the pointer.

The instrument is adjustable to either leg for the purpose of comparison.

For estimating the position of the foot with regard to the leg antero-posteriorly, as in Pott's fracture, the most dependable landmarks are the line of the tibia described above and the tubercle of the scaphoid, while the feet are in the same degree of flexion and extension.

First: Mark the tubercle of the schapoid on both feet with a small cross, the limbs of which are equidistant from the edges of the tubercle.

Second: Take the angle of flexion of the injured foot.

Third: Estimate the perpendicular distance between the base-rod (B) and scaphoid on the sound side while the foot is in a degree of flexion equal to that on the injured side.

Fourth: Estimate the same perpendicular distance on the injured side and compare the two.

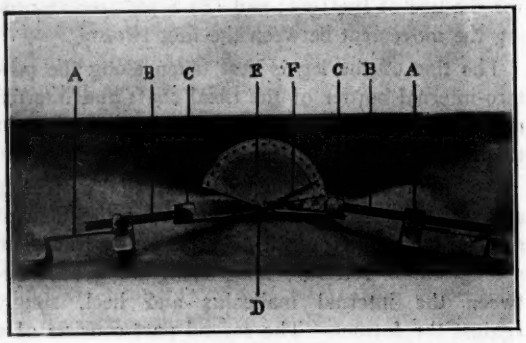

Fig. 3.

III. INSTRUMENT FOR MEASURING THE ANGULATION OF THE KNEE, ELBOW, AND WRIST, ALSO THE CARRYING ANGLE OF THE ELBOW (FIG. 3).

Two clasps (A), each consisting of two semicircular bands connected by a bridge, are attached one to each end of a rod (B), which is set into a

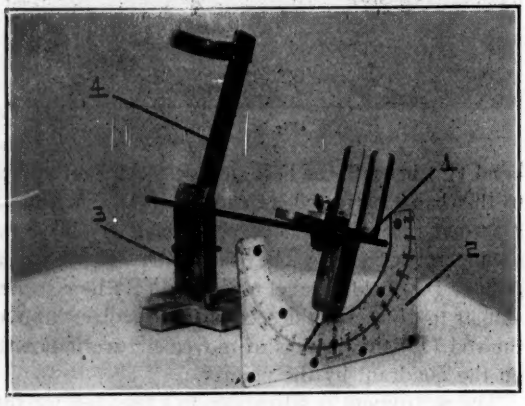

Fig. 4.

socket on the end of each leaf of a hinge (D), to one part of which is centered a quadrant (E), to the other a pointer (F).

One clasp is set astride, say, the forearm, the other astride the arm; and as the elbow is bent the degree of movement is read from the quadrant.

For measuring the carrying angle, the instrument is best placed with its hinge on the inner surface of the internal epicondyle, the clasps on the corresponding sides of the arm and forearm.

IV. INSTRUMENT FOR MEASURING THE CIRCULAR MOVEMENTS OF THE RADIUS (FIG. 4).

The instrument consists of a clamp (1) adjustable to the expansion of the lower end of the radius, to which clamp is fixed a pointer playing around a quadrant (2) attached to the clamp by a ferrule through which slides a rod that at the elbow passes through a standard (3) surmounted by a gable ridge on which rests the groove between olecranon process and internal condyle. To this standard is fastened a reach (4) that clasps the arm higher up, holding it in fixed position both laterally and from before backward.

As the radius moves around the ulna, carrying the clamp and pointer with it, the amount of movement is read off on the quadrant.

STRANGULATED HERNIA.

Most cases of strangulated hernia give positive evidence of intestinal obstruction, besides the local sign of an unreducible hernia, but strangulation may exist without marked signs of obstruction, as for instance, we may have a large mass of omentum incarcerated, with shock, vomiting and the local signs present, and yet the bowels continue to move, until a peritonitis produces the obstruction and death.—F. FLAHERTY, in *N. Y. State Journal of Medicine.*

THE MASTOID IN OTITIS MEDIA.

It is the consensus of opinion to-day that all cases of acute middle ear suppuration are complicated by an inflammation of the mastoid cells. In favorable cases the mucous membrane alone is involved and absorption of the pus from the mastoid cavity slowly takes place before or after the middle ear has healed; at other times an osteitis of the mastoid develops, and healing, if it does take place, occurs very slowly. It may be questionable if a true osteitis of the mastoid cells ever heals completely without operative intervention.—WM. MITHOEFER, in the *Lancet-Clinic.*

TETANUS ANTITOXIN IN OPEN FRACTURES.

The subject of the treatment of open fractures cannot be dismissed without a reference to the administration of tetanus antitoxin. Although no surgeon who considers himself worthy of the name would think of omitting the administration of tetanus antitoxin, yet its use is by no means as general as it should be. The all too frequent occurrence of tetanus, following the open fractures, as seen in some of our general hospitals, is proof of the fact. More general use of tetanus antitoxin is to be urged upon all physicians.—J. L. BENDELL, in *Albany Medical Annals.*

NON-DESCENT OF THE CECUM OCCURRING IN A CASE OF ACUTE APPENDICITIS.

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R. R., station agent in employ of Long Island Railroad was seen in a consultation with Dr. N. S. Wadhams July 31, 1912, at Westhampton Beach, New York.

He had been ill for two days. His chief complaints were peri-umbilical cramps and vomiting. The temperature was 101.4°; pulse 110, respiration 26.

There were rigidity and tenderness in the right upper quadrant, somewhat low for gall-bladder infection and high for appendiceal. High appendicitis was diagnosed.

The patient was removed at once to the Southampton Hospital and subjected to operation. The abdomen was opened through a modified McBurney incision, and after a rather protracted search I came upon a condition which is illustrated in Fig. 2. The appendix was adherent through its entire length to the posterior cecal wall. It is to be noted that the cecum in addition to preserving the fetal position, showed the persistence of the conical type. The appendix was bulbous at the end, constricted at its middle. It was excised unruptured, the base tied off and the wound closed around a small cigarette drain, inserted into the bed which the appendix had occupied. Upon splitting the appendix it was found to be distended with pus. Following a superficial infection, the wound healed. When the patient was last seen in October, 1912, he was in vigorous, robust health carrying on his duties, perfectly cured, without bulging at the site of the incision, and with no symptoms referable to the non-descent of the cecum. Figure 1 shows the various stages of the developmental point of the cecum.

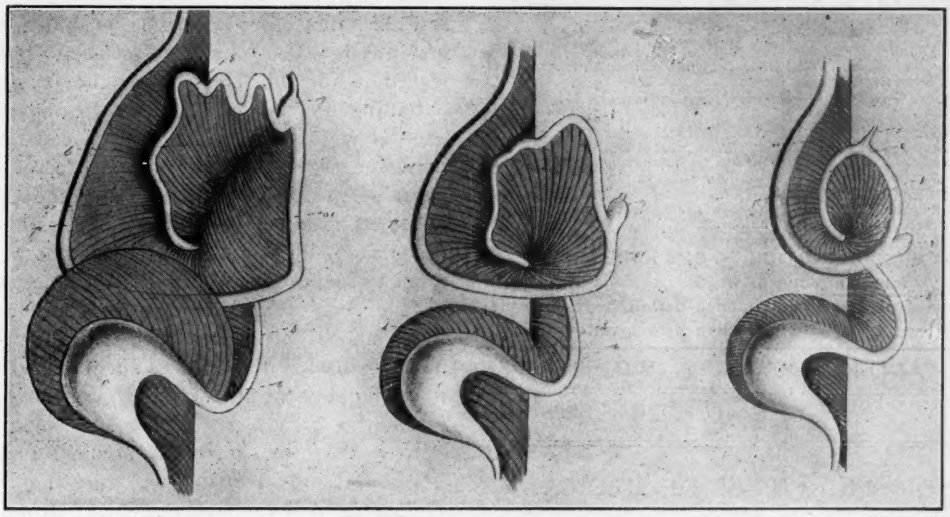

Fig. 1. Three successive stages of the digestive tube and the mesenteries in the human fetus: 1, Stomach; 2, Duodenum; 3, Small Intestine; 4, Colon; 5, Vitteline Duct; 6, Cecum; 7, Great Omentum; 8, Mesoduodenum; 9, Mesentery; 10, Mesocolon (modified from Tourneux).

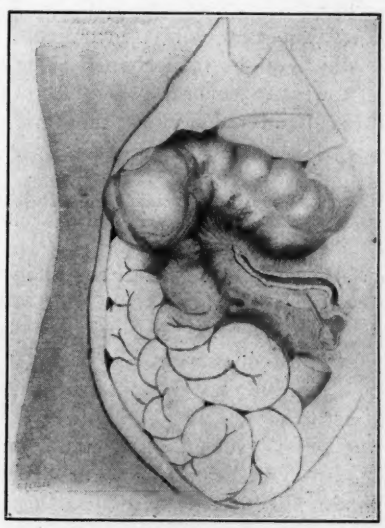

Fig. 2.

PERICARDITIS SIMULATING ABDOMINAL DISEASE.

Pericarditis may give rise to pain and tenderness in the epigastrium, with vomiting and with rigidity of recti, and may simulate abdominal disease. Lesions of the spine and spinal cord sometimes produce abdominal pain, and may simulate gastric ulcer, especially when vomiting is present.—R. J. M. BUCHANAN, in *Medical Press and Circular.*

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, JUNE, 1914.

OUR "PRINCIPLES OF MEDICAL ETHICS."

We believe in the practice of the highest ideals of medical ethics, and we would not wish to relax a jot in the strictest application of any detail of the principles of those ethics that is based on common sense or reflects the proper professional spirit. But, believing also that our code of medical ethics lost much of its great dignity when it was transmuted from the unwritten expression of the professional conscience to a printed primer of precise "principles," we must protest against one of these "principles" that is absurd, archaic and inconsistent.

We would again call attention to Chapter II., Article I., Section 5 of the revised Principles of Medical Ethics of the American Medical Association, published two years ago:

> It is unprofessional to receive remuneration from patents for surgical instruments or medicines; . . .

This rule would mark as unprofessional, by our standard, the great Paul Ehrlich, who has received a royalty on every ampoule of salvarsan and neosalvarsan. *Why* is it "unprofessional" to receive a remuneration from patents on surgical instruments? Why is it not equally "unprofessional" to receive royalties from medical books, equally sold to professional brethren? Why is it not equally "unprofessional" to receive fees for instructing undergraduate and post-graduate students? The Hippocratic oath proscribes the taking of such fees, and the professor who administers that oath at graduation exercises draws his salary from the students' pocketbooks! The proscription against royalties on instrument patents is as outworn in principle as the Hippocratic proscription against fees for tuition.

Our printed ethics, be it noted, does not gainsay the patenting of instruments, but merely the profiting by such patents. Yet the only basis, in tradition, for this rule lies in the possibility of patenting for the purpose of retaining exclusive use—of which mischievous practice we have the illustrious recent instance of the secret employment of the obstetric forceps by the Chamberlains, a trifle over two hundred years ago. Any physician who would want to patent an instrument to secure its use to himself alone would not be the sort of man who would bother himself much about "principles" or "ethics"; nor, probably, would his device be of such a character that its monopoly would seriously concern the profession.

Now that the American Medical Association is about to meet again, we hope the House of Delegates will omit this sentence from Section 5 or, if something about patents must be said, amend it to read:

> It is unprofessional to patent surgical instruments or medicines for the purpose of preventing their manufacture and sale.

Although this is the only "principle of medical ethics" which ought to be omitted because it is wrong, there are several others that ought to be omitted or altered because they are silly.

Chapter II., Article II., Section 3, says:

> When a physician or a member of his dependent family is seriously ill, he or his family should select a physician from among his neighboring colleagues to take charge of the case.

Probably the sick physician has many patients in more or less distant communities. Why less than they may he not feel privileged to select his medical attendant outside of his neighborhood? If he does not want any of his "neighboring colleagues," why "should" he (and of course he won't) "select a physician from among" them? However, he may console himself, if he does not break this rule, with the surprising information that

> Other physicians may be associated in the care of the patient as consultants.

This is gratifying, but not enough. It should also be stated that the sick physician may employ a trained nurse if he can afford it.

Chapter II., Article IV., Section 1, says:

The physician, in his intercourse with a patient under the care of another physician should observe the strictest caution and reserve; . . . nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

and Section 4 says:

. . . he should not make comments on . . . the practice of the one who preceded him.

Quite correct, and so elementary that the ethically inclined physician does not need to be told this and the unethically inclined will not heed it; but how square these declarations with the following concerning consultations? (Chap. II., Art. III., Sec. 1):

All the physicians interested in the case should be frank and candid with the patient and his family.

If a physician replace a colleague in the care of a patient he should, of course, "observe the strictest caution and reserve" concerning that colleague's diagnosis and treatment, but if, in consultation, the practitioner is found to have made an egregious blunder or if, as also often happens, the consultant himself suggests an asinine diagnosis or treatment, "all the physicians interested in the case should be frank and candid with the patient and his family!" And if the patient, dying or afflicted with an incurable malady, hopefully inquires his prognosis, the physicians "should be frank and candid"—and brutal, else unethical! Of course, all of this doesn't mean any of that; yet, in spite of the fact that this printed primer declares that it is merely expressing in a general way the duties of the physician, it is a precise and proper little primer that seems to have tried to say almost everything that its authors could think of on the subject (not even failing to note that a sick physician might have the benefit of consultants), and it ought to have said what they meant.

Chapter II, Article IV, Sec. 2.—A physician should avoid making social calls on those who are under the professional care of other physicians without the knowledge and consent of the attendant, etc.

"Dr. and Mrs. Optic regret that the principles of medical ethics prevent them from accepting the kind invitation of Mrs. Cervix for dinner on April 1, since the unfortunate absence from the city of Dr. Pessary makes it impossible to secure his knowledge and consent."

Of course, this, too, doesn't mean quite what it says. But why is it said at all? The principle involved was quite fully and clearly expressed in the preceding section:

The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

And one would expect a precise meaning in these published "principles," for the prosy, pernickety—and puerile—pamphlet of twenty-three tiny pages has three and a half pages of index containing one hundred and forty-two entries!

Although there is much that is amusing in the composition of these "principles of ethics," the index is quite the funniest part of it. Who would think of looking in an index for such subject-headings as:

Adequate [service for compensation].

Activity [in public health matters].

Another [physician's patient].

The absurdly numerous cross-references in the index to this tiny publication of twenty-three pages quite outdo the amusing instance of fifteen index entries for the "absurd tale about a cockatoo" in Mivart's "Origin of Human Reason." Here are samples:

Condemning secret division of fees	19
Division of fees, secret, condemned	19
Secret division of fees condemned	19
Delicacy, secrecy and patience	3
Patience, delicacy and secrecy	3
Secrecy, patience and delicacy	3
Charlatans, Public to be warned concerning	21
Public to be warned concerning charlatans	21
Warn public concerning charlatans	21

Neither as a literary product nor as a dignified expression of the lofty principles that, traditionally, govern the ethics of our great profession, is there much to be proud of in this little publication. The revision needs to be revised!

W. M. B.

THE FUNDS OF THE AMERICAN COLLEGE OF SURGEONS.

On June 22 in Philadelphia, just preceding the meeting of the American Medical Association, the American College of Surgeons will hold its second convocation. Several hundred fellowships will be awarded with interesting, academic ceremony.

When the college was organized a year ago we inquired, in these columns, what is to be done with the huge sum of money that will accumulate from the $25 initiation fees of the fellows and their $5 annual dues and, with such a large entrance fee, what is the need of these dues, since the degree (F. A. C. S.) could hardly be, or should not be, revocable for mere delinquency in their payment? We noted that a membership of 5,000 within a few years—a small estimate of eligibles—would represent a fund of $125,000 in

initiation fees and an annual income therefrom and from dues of $30,000.

We do not question that these large sums which, as the years go by, will increase to vast proportions, are to be put to good purposes; but we believe it would be quite fitting that, at the coming convocation, the fellows should be told just what those purposes are.—W. M. B.

THE WM. T. BULL MEMORIAL.

Now that we are in an inquiring mood, we should like to ask also what has been done with the Wm. T. Bull Memorial fund? This fund was collected five years ago among the lay and professional admirers of the then recently deceased surgeon to provide a Bull Memorial Department of Surgical Research in Columbia University. No accounting of the fund has been made to the contributors nor, so far as we know, has the department been established.—W. M. B.

MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION.

On June 22, at 9 A. M., the above-mentioned association will meet at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. E. A. Van der Veer of Albany, N. Y. An unusually attractive programme is being prepared. Among the papers are the following:

1. President's Address, E. A. Van der Veer, M.D., Albany, N. Y.
2. "Relation of the Medical Press to the Cancer Problem," by Mr. Fred'k L. Hoffman, Statistician of the Prudential Ins. Co., Newark, N. J. (by invitation).
3. "The Things That Count in Medical Practice," by H. Edwin Lewis, M.D., New York.
4. "Ideal National Medical Journal: What It Should Be and What It Should Not Be," by W. J. Robinson, M.D., New York.
5. "Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Department," by Sarah M. Hobson, M.D., Chicago, Ill.
6. "Medical Journalism as a Local and as a National Proposition," by Thomas S. Blair, M.D., Harrisburg, Pa.
7. "Medical Books and Journals," by T. D. Crothers, M.D., Hartford, Conn.
8. "The Medical Periodical and the Scientific Society," by F. H. Garrison, M.D., Washington, D. C.
9. "Editorial Experiences," by A. L. Benedict, M.D., Buffalo, N. Y.
10. "The Special Medical Journal," by A. Bassler, M.D., New York.
11. "The Medical Profession and Its Influence from a Buying Standpoint," by Joseph MacDonald, Jr., M.D., New York.
12. "The Preparation of the Original Article and the Editors' Latitude," by E. Franklin Smith, M.D., New York.
13. "Medical Publicity in the Lay Press," by Chas. E. Woodruff, M.D., New York, Lieut. Col., retired, U.S.A.
14. "He, Who Is Without Sin Among You, Let Him First Cast a Stone," by E. Reissman, M.D., Newark, N. J.

Surgical Suggestions

The abduction treatment, so useful in many types of "stiff and painful shoulder," is not conveniently carried out in an abduction splint, as recommended. The wearing of such an apparatus, not regulable from hour to hour, would necessarily confine the patient to his home. It is much better, therefore, to put him to bed or, in mild cases, on a lounge, and abduct the arm on pillows, with or without a sling running from the wrist to the head of the bed, elevation of which, by causing the body to slide down unconsciously, increases the abduction. This method of abduction is not only convenient, comfortable and easy of application, but also has the advantages of being easily regulated and, if necessary, discontinued occasionally to relieve pain or fatigue.

The ideal method of cholecystectomy is to: drag the gall-bladder and, with it, part of the liver as far as possible out of the wound, with a clamp; split the serosa through the middle of the under surface of the gall-bladder down to or on the cysticus; peel back these peritoneal flaps; ligate the exposed cystic bloodvessels on the cysticus, thus obviating bleeding; clamp off and amputate the gall-bladder; investigate and treat the hepatic and common ducts; suture the peritoneal flaps over the gall-bladder bed; insert tube drain down to or into the cysticus, according as it does or does not appear desirable to ligate the duct. This procedure makes the operation practically bloodless and easily controllable, obviates oozing from a raw liver surface and the introduction of gauze packing to control it, and shortens the period of healing. To be sure, this ideal method is not always applicable, as in gangrenous gall-bladders, especially in obese subjects.

Surgical Sociology

Ira S. Wile, M. D., Department Editor.

ANIMAL EXPERIMENTATION.

The Bureau for the Protection of Medical Research of the American Medical Association is desirous of obviating as completely as possible any cause for criticism against animal experimentation as well as criticism of new methods in medical practice.

Inasmuch as a good deal of the "evidence" used by anti-vivisectionists or other hostile critics is taken from articles published in medical journals, it is timely that the American Medical Association should endeavor to unite medical editors in a general plan to more carefully edit articles submitted for publication so as to secure the elimination of words, clauses, or sentences which might be misinterpreted or which serve to disguise the actual methods pursued.

At the present time, part of the general intellectual unrest is evidenced in dissatisfaction with things as they are. The majority of the public is not familiar with the aims, the methods, or the significance of medical research. They fail to appreciate its social significance or social value. Unaware of the tremendous advances in public health, and unknowing of the personal benefits they have achieved through animal experimentation, they are easily led astray by the sentimental, mawkish, emotional, and inaccurate statements which emanate from the minds of those peculiar persons who estimate world values in terms of mice and guinea-pigs.

It is timely that the medical fraternity should arise, not to its own defense, but to the defense of the public against the anti-social, malevolent strictures which hysterical agitators desire to place upon measures designed to lessen the burdens of humanity and to safeguard the present and future generations. If health is a purchasable commodity, part of the cost is paid in terms of life, but it is far better for the community that the lives expended should be those of pigs, rats, guinea-pigs, and monkeys rather than human beings.

Ruthless destruction of animate beings is never to be encouraged. Wanton wastage of domestic animals is not to be condoned, nor indeed does the medical profession aid or abet heartless, unsympathetic vivisection of the pure joy of rending defenseless creatures lifeless. Surely humanity does far more vivisection in hunting, fishing, hawking, dog-fighting, or bull-fighting in a single month than could be laid to the doors of animal experimentation since the first experiment on Adam. If one contemplates the sacrifice of animals for personal adornment, covering or food, the horrible effects of all the animal experimentation practiced with the authority of the medical profession fade into insignificance. It is needless to recount the gains in health, the elimination of disease, and the conservation of human beings which has been made possible through rational, systematic, scientific, altruistic animal experimentation.

The history of surgery is brighter and its development more rapid because of the sincerity and high-mindedness of the research workers who have indulged in animal experimentation. The world is richer for their being and for their work. The "martyrdom" of a few animals has caused deterioration save apparently in the minds of that group of individuals whom Dr. Dana has characterized as suffering from zoophilic diathesis.

HOSPITALS FOR COMMUNICABLE DISEASES.

In the Public Health Bulletin No. 62 issued by the United States Public Health Service dealing with Communicable Diseases, one finds a splendid compilation of material analyzing the laws and regulations for the control thereof in force in the United States. The basis of preventive medicine is elimination of contagion, the segregation or cure of contagion-bearers, and the sanitary improvement of environment so as to lessen the possibility of the distribution of communicable disease.

At the present time, state health laws largely represent an attempt to control communicable diseases originating beyond the borders of the state. Modern theories of disease causation have not fully penetrated the legislatures. Quarantine, disinfection, and fumigation have been given unusual attention owing to the earlier imperfect ideas with regard to the spread of disease, while insufficient attention has been given to the protection of the public from insects and rodents, the protection of the milk, water and general food supply, and the disposition of excreta.

According to this Bulletin, it may be conservatively estimated that at least 25 per cent. of the deaths in this country have for their direct or immediate cause communicable diseases. This must, of course, be regarded merely as an estimation as there are insufficient available data for an exact determination, even for the registration area. Accepting this ratio, over three hundred thousand deaths occur annually from communicable diseases. The morbidity rate is a matter of conjecture, but probably over three million cases of communicable disease, which are preventable, occur yearly within the United States.

In order to cope with this tremendous amount of sickness along preventive lines, it is essential to have efficient federal, state and local health organization with thorough coöperation among them, backed up by modern laws and regulations and particularly by the education of the public to the importance of supplying sufficient funds to secure the enforcement of such laws.

The establishment of hospitals for communicable diseases is demanded by law in very few states. In Massachusetts, cities and towns are empowered, and on the request of the State Board of Health compelled, "to establish and constantly maintain within their limits one or more hospitals for the reception of persons having smallpox, diphtheria,

scarlet fever, tuberculosis, or other diseases dangerous to the public health, or to make arrangements with neighboring communities for establishing such hospitals."

In the majority of the states, power to establish and maintain hospitals for communicable diseases is permissive to counties, townships, and cities with great variation, dependent upon the point of view of the legislators in the various states and upon the degree of congestion existent in various portions of the state.

In Alabama, a portion of the state health appropriation must be employed for the maintenance of a field hospital for communicable diseases.

In Arizona, North Dakota, Ohio, Oregon, and South Dakota, local boards of health are authorized to provide temporary places for the care of persons with communicable diseases. In Oregon, the regulations of the State Board of Health advise municipalities with a thousand inhabitants to securing cottages to properly segregate persons afflicted with contagious diseases.

The general attitude towards hospitals has been rather the individual benefits which accrue to the patients. The large social significance of hospitals as institutions for the protection of the community is slowly being disseminated throughout the country. At the present time, there is a large diversity of institutions maintained for specific purposes at an immense cost. It would be possible to unite many of these institutions in such a way as to eliminate the duplication of effort without increasing the overhead charges. There is an unfortunate tendency to the duplication of institutions of the same order which tend to impoverish a community rather than enrich it or secure greater efficiency in administration.

Under modern sanitary régime, it would be rational to combine many existing institutions to the advantage of both the patients and the community.

Greater efforts should be given to the establishment of large general hospitals with general outpatient departments capable of giving such medical, surgical, and social care as would relieve the beds of the hospital for the acute cases where hospital care is imperative.

There is an inadequacy of hospital care for the communicable diseases, particularly for whooping cough, measles, scarlet fever, and erysipelas. While there might be some objections to having wards of a general hospital given over to the care of these conditions, there does not seem to be sufficient grounds for divorcing such diseases from the plan and scope of a well-organized modern sanitary hospital. The complications which attend these conditions frequently require surgical intervention and the facilities for such operative care have been overlooked almost entirely in the planning of institutions for the care of these diseases.

HOSPITAL RESEARCHES.

In the advances of all sciences, wave follows wave and there are periods of crest and depth which serve to indicate the measurable progress. Inspiration and aspiration call forth ambition, education, and research. In the domain of medicine, a new era has arisen. The standards of the past, rooted in antiquity and tradition, are being revised in the light of modern needs. The desire for facts, scientific and basic, has given rise to a period of marked development. Under the goad of educational ideals, a reorganization is slowly making itself manifest. The dependence of good medicine upon educational advances is more evident than ever before and its recognition is leading to an intelligent conception of the new fields of medical thought.

The discoveries of Koch and Pasteur developed bacteriology. The investigations of Wright, Ehrlich and Wassermann have revised our theories of immunity. The studies of Funk, Chamberlain and Vedder have given us new theories of food values. The careful work of Carrel, Roentgen, Curie, Lane, Murphy, Crile, Welch, Meltzer, Starling, Loeb, Trudeau, and numerous other students with vision have yielded to the community worthy dividends beyond compare.

Research is fundamental to progress, and research is based upon thoughtful analysis and medical imagination. The hospitals will have a unique place in the medicine of the future. The spirit of the laboratory in its highest sense must permeate our wards and the clinical atmosphere of the wards must unite with that of the laboratory. The educational function of the hospital must be evidenced in progressive, united and purposeful research.

Book Reviews

A System of Surgery. Edited by C. C. CHOYCE, B.Sc., M.D., F.R.C.S., Dean of, and Teacher of Operative Surgery in, the London School of Clinical Medicine (Post-Graduate); (Dreadnought) Surgeon to the Seamen's Hospital, Greenwich; Surgeon to the Great Northern Central Hospital. Pathological Editor, J. MARTIN BEATTIE, M.A., M.D., C.M., Professor of Bacteriology in the University of Liverpool; Hon. Pathologist to the Sheffield Royal Infirmary and Royal Hospital. In three large octavo volumes of about 1,000 pages each. *Volume III.* 901 pages; 34 plates in black and in color, and 342 text illustrations. New York: FUNK AND WAGNALLS CO., 1912. Cloth, the set, $21.00, net.

The greater part of two years has elapsed since the first two volumes of this excellent system appeared. Those of our readers who are familiar with Volumes I and II will require no extended review of Volume III, and those unfamiliar with them will best be served by a repetition of the general impression of the work expressed in the earlier review (the JOURNAL, February, 1913, page 75):

"Although it is composed of individual monographs by about 50 English authors, it is far more acceptable than the usually rather disjointed and uneven 'system.' It also differs much from the common type of English medical works in that it has gotten away from the insularity that usually characterizes them. Indeed, this system appears English chiefly in its authorship. In text and bibliography it quite recognizes that surgery is a mosaic of international workmanship.

"We are pleased also with the prominence given to the pathology of the various diseases considered, and to their differential diagnosis. Operative measures are also re-

ferred to and indicated or described, but details of technic are left for works on operative surgery, where they belong."

In Volume III we again find chief emphasis on pathology and clinical manifestations, without, however, neglect of treatment. It deals with The Cardio-vascular System, by E. Rock Carling; The Lymphatic System, by J. F. Dobson; The Neck, by Arthur Edmonds; The Ear and the Upper Air Passages, by J. Stoddart Barr and Harold Barwell; Direct Examination of the Lower Passages and Esophagus, by St. Clair Thomson; the Lungs and Pleura, by H. Morriston Davies; The Nerves, by James Sherren; The Scalp, Skull and Brain, and The Spine and Cord, by Wilfred Trotter; The Jaw, by D. C. L. Fitzwilliams; The Skin and Subcutaneous Tissues, The Muscles, Fasciæ and Tendons, and The Bursæ, by T. P. Legg, E. Rack Carling, and E. D. Telford, respectively; The Bones and Joints, by C. C. Choyce and Albert J. Walton; and Orthopedic Surgery, by R. P. Rowlands. These sections are all of a high order of excellence. Each is supplemented with bibliographies. There is a general as well as a volume index. An authors' index might well have been added.

An Introduction to the History of Medicine, with Medical Chronology Bibliographic Data and Test Questions. By FIELDING H. GARRISON, A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C. Octavo; 763 pages; illustrated. Philadelphia and London: W. B. SAUNDERS COMPANY, 1913.

It has been a rare privilege to peruse this book. Only once in a long while is given to the reviewer the pleasure of making a "discovery"; this sensation the reviewer acknowledges in the present instance. American literature has long been conspicuous for its lack of a good general history of medicine. A number of attempts have been made, but none has met with approval. Garrison's "History," we predict, will not only lift this opprobrium from our literature, but it will take its place among the best shorter histories of medicine extant.

While modestly entitled "An Introduction to Medicine," the work is so only in a narrow sense. A complete history of medicine must obviously be encyclopedic in dimensions, but there probably never will be a demand for such a work. What the student or the average physician demands is an adequate survey of the progress of medicine, with brief accounts of the lives and labors of the most important contributors to this progress.

Assuming even that an author is equipped with sufficient talent and scholarship, the writing of a satisfying history of medicine is an extremely difficult task. In the first place, medicine has not progressed along one steady path; that progress has aptly been called a series of mighty epics. Furthermore, medicine is so cognate with most of the other sciences that it is difficult to discover where it ends and the special science begins, or vice versa. Then, the progress of medicine can also be described, as Lowell termed the French revolution, as a series of biographies. No modern historian, we venture to say, would think of writing a history of medicine on a purely biographical plan, but a history would lose much of its interest if biography were entirely eliminated. On the other hand, medicine, we are proud to say, is an art as well as a science and a respectable as well as fascinating history could be written of the methods of medical practice alone, from the days of Aesculapius to the present. Finally, no branch of human knowledge is so indissolubly connected with life itself in all its various phases and it is no presumption to say that a history of medicine is in a sense a history of humanity itself.

A good history of medicine must combine in suitable proportions all these various phases. It is manifest therefore that scholarship of a high order is required to weave the vast material into a satisfactory pattern. We cannot think of a training more stimulating to the cultivation of such a scholarship than that of a position as the principal assistant in the Surgeon General's library. In this sphere one is brought into constant contact with every phase of medical activity, past and present. When, in addition to such a training, we find a keen critique, distinctive literary ability, and a fine sense for characterization, we perceive that the author is unusually equipped as a medical historian.

While at first glance the text appears rather disjointed, closer study reveals a logical plan. Garrison divides the history of medicine into twelve periods: Ancient and Primitive Medicine, Egyptian, Sumerian and Oriental, Greek, Byzantine, Mohammedan and Jewish, Medieval, Renaissance and Reformation and the 17th, 18th, 19th and 20th Centuries. In each period the story of the progress of medicine is told, partly as a continuous narration and partly in biographical form. The biographies fit into the narration perfectly, so that the continuity of the story is not broken. These biographies are models for terseness and proportion of detail. What gives many of them especial charm is their delightful and often humorous characterization. Important discoveries, with their date and author, are usually printed in small letters. Especially interesting are the chapters on the social and cultural aspects of medicine, affixed to each period, from the Mohammedan to the present. In these chapters, the mode of practice characteristic of each period, including fees, is set forth.

The chapter on the social and cultural aspects of modern medicine reveals the catholicism of the author in striking fashion. We find here a broad and critical discussion of such subjects as fees, medical art, education, education of women, hospitals, nursing, care of the insane, hygiene, medical publications, sectarianism and quackery, and internationalism. The appendices include a medical chronology, bibliographic notes for collateral reading, test questions and an index for proper names. There is also a full index of subjects. The illustrations form a singularly delightful feature of the book. All in all, the writer deserves congratulations for having made a book of which American medicine may well be proud.

Chirurgische Operationslehre. By AUGUST BIER, Berlin; HEINRICH BRAUN, Zwickau, and HERMANN KUEMMELL, Hamburg. Vol 1, Part II. Leipsig: JOHANN AMBROSIUS BARTH, 1914. Price, $6.25.

With the publication of this part of the work, the three volumes of this text-book of operative surgery are now complete. Each section, as it appeared, was reviewed in these columns. This section deals with operations of the head and face, and those of the spine and spinal cord. The same high level of excellence that was evident in the other parts of this operative surgery is to be seen here. There are few chapters towards which adverse criticism can be directed. It is found, however, that the removal of non-circumscribed tumors of the brain is all too briefly and dogmatically presented (page 91). The methods of intracranial approach to the sella turcica are not well described, and recent advances in the field are not mentioned (page 111). The section dealing with operations on the face, by Koenig, Lexer, and Wiede, is the best in this volume; but altogether too much space is devoted to the results of individual plastic operations, and too little to the underlying principles of technic. Laryngectomy, described by Schmieden, is beautifully illustrated by colored plates taken from his book on operative surgery (reviewed in this issue of the JOURNAL). However, the author does not devote much attention to the technic of removal of spinal cord tumors.

The text is clear and well arranged throughout, the numerous illustrations are beautifully executed, the treatment of the subjects admirable. Part II of Volume I takes its place with the others in what will prove to be a standard text-book of operative surgery.

Der Chirurgische Operationskursus. Ein Handbuch fuer Aerzte und Studierende. PROF. DR. VICTOR SCHMIEDEN, Professor der Chirurgie, Direktor der Koenigl; Chirurgischen Universitaets-Klinik zu Halle. *Third edition.* Leipsig: JOHANN AMBROSIUS BARTH, 1914.

The great value of Schmieden's text-book of operations upon the cadaver we have pointed out in the reviews of the first and second editions of his work.

All that need be added is that the book has been brought completely up to date, the most recent developments in surgical technic having been added.

The Pathology of Growth Tumors. By CHARLES POWELL WHITE, M.D., F.R.C.S., Director, Pilkington Cancer Research Fund; Pathologist, Christie Hospital, Manchester; Special Lecturer in Pathology, University of Manchester. Octavo: 235 pages; illustrated. New York: PAUL B. HOEBER, 1913.

This is another book that attempts to discuss an immense subject within unreasonably small limits. In thirteen short chapters (the text is far shorter than appears, owing to abundant illustrations, large type and wide spacing), White attempts to cover the gross and histological features of tumors, besides such large subjects as regeneration, transplantation, the growth, origin, cause, and physiological and biological aspects of tumors. The result is that when one has finished reading the book, he feels that he has merely skimmed the subject. The work may serve a useful purpose as an elementary text book for beginners. It is of no value whatever as a work of reference. As an instance of the inadequacy of the text, we may mention that the entire subject of teratoma is dismissed in about three full pages. The book is written in a didactic manner, without a single reference of any kind. The illustration, nearly all microphotographs, are excellent and well reproduced.

Modern Surgery, General and Operative. By JOHN CHALMERS DACOSTA, M.D., LL.D.; Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia, etc., etc. *Seventh edition.* Large octavo; 1,515 pages; 1,085 illustrations, some in colors. Philadelphia and London: W. B. SAUNDERS Co., 1914. Cloth, $6.00 net.

In reviews of earlier editions we expressed the opinion that this is the best single-volume text-book of surgery in English. Of this edition we cannot say more, and we find no reason to say less.

The book is enlarged by only a dozen pages, but it shows careful revision and a conscientious effort to include all the important new facts in surgery.

Radium Therapeutics. By N S. FINZI, M.B. (Lond.), M.R.C.S., L.R.C.P., L.S.A., Chief Assistant in the *X*-ray Department, St. Bartholomew's Hospital, London. Duodecimo; 112 pages; illustrated. London: OXFORD UNIVERSITY PRESS, 1913. Price, $2.00.

This timely little work is a concise description of the various radium rays, radium emanations, and radium decomposition products of the action of radium radiations on the animal tissues, and of the methods of employing radium, uranium, thorium and mesothorium therapeutically. The work is very condensed, dealing with general rules rather than with statistical reports or clinical considerations.

Medical Gynecology. By S. WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. *Third edition.* Octavo; 790 pages; 150 illustrations. Philadelphia and London: W. B. SAUNDERS COMPANY, 1914. Cloth, $5.00, net.

A valuable feature of this revised edition is the enlarged chapter on disturbances of the glands of internal secretion. While there is much room for a better understanding of this subject, Bandler has appropriately incorporated into his medical gynecology what is known with a certain amount of definiteness concerning the derangements of the organs of internal secretion and their effects upon the genital functions of woman as well as upon her general health. We feel after reading this chapter and the rest of the book that we have been aided toward a more intelligent consideration of gynecologic disease and its more rational treatment.

Treatment of Sexual Impotence, and other sexual disorders in men and women. By WILLIAM J. ROBINSON. Duodecimo; 422 pages. New York: CRITIC AND GUIDE COMPANY, 1913. Price $3.00.

This book, dealing with mooted and difficult questions, satisfies several very important demands. We have here a legitimate medical consideration of such matters as masturbation, pollutions, spermatorrhea and sexual impotence, which hitherto have been and even at the present time are still relegated largely to the wilful disposition of quacks. It is well to have an authoritative opinion as that given by the author in no uncertain terms about these borderline topics. In addition to Robinson's valuable instructions in diagnosis and these recommendations for appropriate medical and surgical treatment of these sexual disorders, his original literary treatment of the subject and the strong personality infused throughout his text are enough in themselves to insure for this work prompt popularity.

Chronic Ulcers of the Leg. By EDWARD ADAMS, M.D., Instructor of Surgery in the New York Post-Graduate School and Hospital; Attending Surgeon to the German Hospital, Out-Patient Department. Duodecimo; 127 pages; illustrated. New York: THE INTERNATIONAL JOURNAL OF SURGERY Co., 1914.

This small book is intended as a résumé of the various methods of treatment of chronic ulcers of the leg, and the results of these methods in the hands of the author. Adams has successfully accomplished his object, and we have, in his work, a desirable summary of the subject presented in a very simple way. Nothing new is offered, but most of the standard methods of treatment are well analyzed. The book should appeal to those who do not wish an exhaustive survey of the diagnosis and treatment of chronic ulcer of the leg.

Books Received.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Published bi-monthly. *Volume III, Number* 1. Octavo; 190 pages; 91 illustrations. Philadelphia and London: W. B. SAUNDERS COMPANY, 1914. Price per year: Paper, $8.00. Cloth, $12.00.

Radium Therapeutics. By N. S. FINZI, M.B. (Lond.), M.R.C.S., L.R.C.P., L.S.A., Chief Assistant in the *X*-Ray Department, St. Bartholomew's Hospital. Octavo; 112 pages; illustrated. London: OXFORD UNIVERSITY PRESS, 1913.

The Pathogenesis of Salvarsan Fatalities. By SANITÄTS-RAT DR. WILHELM WECHSELMANN, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital, Berlin. Authorized translation by CLARENCE MARTIN, M.D., St. Louis, Mo. Duodecimo; 143 pages. St. Louis: THE FLEMING-SMITH Co., 1913. Price, $1.50.

Surgery; Its Principles and Practice. For Students and Practitioners. By ASTLEY PASTON COOPER ASHHURST, A.B., M.D., F.A.C.S., Instructor in Surgery in the University of Pennsylvania; Associate Surgeon to the Episcopal Hospital; Assistant Surgeon to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. Large octavo; 1141 pages; 7 colored plates and 1,032 illustrations. Philadelphia and New York: LEA AND FEBIGER, 1914. Cloth, $6.00, net.

Progress in Surgery

A Résumé of Recent Literature.

Extirpation of a Tumor of the Pancreas. (*Exstirpation eines Pankreastumor.*) W. KOERTE, Berlin. *Deutsche Medizinische Wochenschrift,* 1914, No. 9.

The patient, a young woman, had been operated upon by another surgeon for intestinal obstruction, and the cystic tumor of the pancreas had been sutured to the abdominal wall and then drained. The fistula never closed, and the surrounding skin was constantly irritated by the discharge. Koerte followed the fistulous tract into the depths and found that it led to a multilocular tumor of the pancreas. The numerous adhesions were divided and the tumor, together with a V-shaped portion of the pancreas, was removed. The defect in the pancreas was sutured, and the wound closed about gauze drains. There was a profuse serous discharge that soon ceased, and the patient is now entirely well.

Macroscopically the tumor was a multilocular cystadenoma. Upon microscopic examination the cyst walls were found lined with a thin layer of epithelium. One region, that of the tumor mass, showed a carcinoma-like structure.

It is pointed out by Koerte that the surgical treatment of cysts of the pancreas depends on their structure. Most of them are pseudo-cysts, of inflammatory or traumatic origin, and the history of these cases clearly points to the nature of the cysts. The correct treatment for them is suture to the abdominal wall and drainage. Such treatment is not curative for the rarer, true cysts (cystadenomata). These grow slowly and give no symptoms until they encroach upon neighboring organs. Drainage does not cure the patient; in fact, Koerte believes that these tumors should be left alone unless they can be excised.

Cyto-Diagnosis of the Stomach. LOEPER and BINET. *Archives des Maladies de l'appareil Digestif et de la Nutrition,* April, 1914.

The report is based upon 160 examinations; 21 of the cases were followed to operation or autopsy. The patient is examined after a 12-hour fast. An ordinary stomach tube is gently inserted and the stomach washed by siphonage. There is then introduced 300 cc. of 0.7% salt solution, and within a minute this is allowed to siphon back. This fluid is centrifuged for ten minutes and the sediment smeared on a slide, dried, fixed in alcohol and stained with eosin-hematoxylin.

The authors claim a characteristic picture for each of the gastric diseases.

1. *Normal*—a few pavement cells of the mouth or esophagus, large, rectangular or polygonal, with small, dark nuclei; a small amount of debris. In cases of sialophagy these large cells with small nuclei are very numerous; they are usually covered with bacteria.

2. *Dyspepsia*—the same as above. Cystology here most useful in ruling out an organic lesion.

3. *Gastritis*—Pytologically, four types are recognized:

(a) *Mucous gastritis*—characterized by an abundance of mucus; frequently yeast cells.

(b) *Hypergenetic and Desquamative Gastritis*—very numerous, small, rounded polygonal cells; protoplasm is indistinct, granular, pale eosin color, and frequently escapes from the cell borders. Nuclei are relatively large and deeply stained blue. Differentiation between chief and border cells is impossible.

(c) *Diapedetic Gastritis*—characterized by the large number of leucocytes, polymorphonuclear, eosinophilic and lymphocytic.

(d) *Congestive Gastritis*—Large number of red blood cells are present, besides the leucocytes. The red blood cells are dispersed, and pale, in contrast to the findings in ulcer, in which rouleaux formation and fresh, bright blood cells are seen.

In general, the findings of the authors tend to increase the number of cases of gastritis at the expense of the dyspepsia cases.

4. *Ulcer*—A few small epithelial cells, many polymorphonuclear cells, and a variable number of red blood cells. Infected ulcers give a larger percentage of leucocytes. The process of healing may be followed by the disappearance of this cystological formula.

5. *Cancer*—Pyloric tumors give cylindrical and elongated cells; those of the fundus and borders, small round and polygonal types. These latter have an indistinct protoplasm, light though large nuclei. The whole cell is smaller in size than a leucocyte.

Cells from colloid carcinomata show vacuolated protoplasm taking strong eosin stains.

Infection of an ulcerating growth is easily identified.

Hypertrophic Pyloric Stenosis in an Infant; Rammstedt's Operation. HOWARD LILIENTHAL. New York. *New York Medical Journal,* April 11, 1914.

The mortality after gastro-enterostomy and pyloroplasty for hypertrophic pyloric stenosis in infants is formidable. Rammstedt's operation consists in longitudinal incision through the indurated tissue down to the mucosa without opening it. The wound is left without sutures and the abdomen closed. Rammstedt reports two successful results and now Lilienthal reports another. The infant was five weeks old, showed all the typical symptoms of hypertrophic pyloric stenosis and was fearfully emaciated. Lilienthal operated according to the method above described. The relief of the pyloric constriction immediately after division of the muscular coats was quite noticeable, the gap in the incision being one cm. wide at its broadest part. The operation took only nine minutes including suture of the abdomen. The child improved promptly and at present is normal in weight and appearance.

Mikulicz's Disease. CARL FISHER, Rochester, Minn. *The Journal-Lancet,* March 15, 1914.

A typical case of this unusual disease is described. It occurred in a male, aged 47 years, and when seen by Fisher had been present for five years. It began with swellings under the lower jaw, followed by enlargements of the lachrymal glands and then the axillary lymphnodes. As shown by the illustration, the tumors had reached an enormous size. *X*-ray examination showed involvement of the mediastinal nodes. The blood examination, except for a slight increase in polynuclear leucocytes and an anemia, was normal. Specimens were excised from the submaxillary region and from the lachrymal gland. These showed masses of lymphoid cells of rather large size.

The author in a brief discussion is inclined to place the disease in the same class as Hodgkin's disease—it is a clinical type of apparently the same pathological process and is evidently closely related to lymphomata and to the leukemias.

Cholecystitis and the Factors that Control Results of Operation. C. H. MAYO, Rochester, Minn. *The Journal-Lancet,* April 1, 1914.

Mayo emphasizes the fact that gastric symptoms are very often reflex, taking their origin in disease of the gall-bladder. Such disease, however, is often difficult to detect, even when the abdomen is opened, for the external surface of the gall-bladder may appear normal and adhesions may be absent. In such cases Mayo believes that the lymph-nodes extending along the common and hepatic ducts and one or two situated near the cystic duct may be of great use in giving the surgeon the needed information. When these glands, which may best be palpated with one's finger through the foramen of Winslow, become enlarged, it means that there is disease in the duodenum, the pancreas or the gall-bladder. When a definite source of infection is known, the treatment of mild cases of cholecystitis may be medical; but for the same cases, when found surgically, prolonged drainage should rarely be instituted rather than the removal of the gall-bladder.

The Chemistry of the Duodenum; Its Comparative Value with the Indirect Methods of Testing Pancreatic Function. GLATZ. *Archives des Maladies de l'appareil Digestif et da la Nutrition*, March, 1914, page 121.

The methods of examination of duodenal contents are the accepted ones; the Einhorn Duodenal Tube is used; milk is employed as a test meal, and to carry with it, the tube into the duodenum. The chemical methods used are grossly qualitative, and no attempt at quantitive estimation of pancreatic activity is made. The stool is examined for trypsin by means of Schlecht-Müller plates of serum; the Sahli and Schmidt tests are also employed, as well as the adrenalin test of Lödi. The results were as follows:

Normal—10 *cases*—Bile and pancreatic ferments present in all cases. Glutoid capsule test of Sahli, positive 6, negative 3; serum plates, positive 8, negative 1; Schmidt nuclear test, positive 4, negative 5.

The reliability of the duodenal test and the unreliability of the other tests is easily noted.

Diseases of the gastro-intestinal tract—Including functional disturbances, gastric ulcers and carcinomata, and alcoholic liver cirrhosis. Twenty cases—bile and pancreatic ferments constantly present in all. Sahli glutoid test, positive 13 times, negative 5 times. Serum plates, positive 19 times, negative once.

PANCREATIC DISEASES.

1. *Cancer of Stomach and Pancreas*—Duodenal contents—bile present. Pancreatic ferments negative. Stool ferment tests and adrenalin eye tests all negative.

2. *Cancer of Head of Pancreas* (confirmed at autopsy)—Pancreatic ferments absent. Bile not mentioned. Stool ferment tests, adrenalin eye tests negative.

The paper is valuable as showing in a large series of normal cases, and of gastro-intestinal diseases, the constant presence of bile and pancreatic ferments in duodenal contents and the irregular results with other tests. The Schlecht-Müller plates are more reliable than the others. In two cases of pancreatic carcinoma the pancreatic duct was found obstructed.

Cholecystitis Without Stones or Jaundice in Its Relation to Chronic Pancreatitis. W. J. MAYO, Rochester, Minn. *American Journal of Medical Sciences*, April, 1914.

Mayo calls attention to cases of chronic pancreatitis not associated with jaundice, in which at operation the gall-bladder is found undistended and free from stones, yet is nevertheless the seat of a chronic cholecystitis. The inflammation is characterized by the so-called "strawberry" appearance of the mucosa of the gall-bladder. The important point is that these patients are not cured by mere drainage of the gall-bladder. They are free of symptoms as long as the drainage persists; as soon as the opening closes the symptoms recur. For such cases cholecystectomy is the justifiable procedure.

A Method for Plicating Voluminous Ceca. JOSEPH A. BLAKE and J. N. WORCESTER, New York. *Medical Record*, April 4, 1914.

The authors' method is applicable to cases of large dilated ceca which give rise to a rather definite symptom-complex. The major symptom is pain in the lower right quadrant occurring in ill-defined attacks. In addition there is abdominal distension with gas, constipation and symptoms of intestinal auto-intoxication and gastric symptoms. *X*-ray examination shows the cecum low in the true pelvis, and poor emptying of its contents. At operation, the cecum is usually found mobile with a good mesentery, but the organ is unusually large and has thin walls. The authors do not believe the mobility has anything to do with the symptoms; rather these are due to lack of mobility and contractility. Blake's operation consists in passing a continuous silk or linen suture between the external and middle longitudinal bands; the stitch is carried aborally as far as is practicable, usually ten to fifteen cm., so that when tied the gut is contracted longitudinally as well as transversely. In all cases the appendix is removed. The authors' analysis of their results in fourteen cases prove that the operation is of profound benefit.

A Case of Transgastric Excision of a Gastro-Jejunal Ulcer. B. G. A. MOYNIHAN and E. T. TATLOW, Leeds. *Lancet*, March 14. 1914.

This rather unusual case was ingeniously handled. Two years after a gastro-enterostomy was performed for duodenal ulcer there was recurrence of symptoms. At the second operation an indurated gastro-jejunal ulcer was found on the posterior opening of the gastro-enterostomy, which was patent and otherwise in good condition. An opening into the anterior wall of the stomach was thereupon made, the ulcer averted into the incision and excised. A temporary gastrostomy was also done. The patient made a perfect recovery.

Contribution to the Treatment of Duodenal Fistula. C. A. PANNETT, London, *Lancet*, April 18, 1914.

Sutures of a duodenal perforation resulted in a formation of a fistula. Four days later the condition of the patient was desperate. As a last resort, Pannett opened the abdomen, made a side-to-side anastomosis in the first foot of jejunum and then made a jejunostomy in the efferent loop. Food was given through this tube and through the mouth. The fistula immediately began to close and the patient made a perfect recovery. Pannett compares the advantages and disadvantages of this procedure with others that have been recommended for duodenal fistula—especially with the operation of Berg (gastroenterostomy with occlusion of the pylorus). He believe that his method will prove the method of choice.

Radium Treatment of Carcinoma of the Uterus. (*Zur Radiumbehandlung der Uteruskarcinom.*) R. KÖHLER AND O. SCHINDLER, Vienna, *Wiener Klinische Wochenschrift*, April 9, 1914.

The authors report very favorable results in seven cases of epithelioma of the cervix, six of which were inoperable. A tube containing 29 mg. of radium bromide, enclosed in a platinum and lead shell was inserted into the tumor, through either a sloughing fistula or an artificial opening. A preliminary microscopic examination was made in every case. In every case, the patient thus far is free from tumor, not only clinically, but microscopically. In one case, a recto-vaginal fistula resulted from an extensive radium burn.

A Plea for Early Operation in Case of Uterine Fibroids. A. E. GILES, London. *The Medical Press*, February 18, 1914.

In an analysis of 580 cases of uterine fibroids, the author brings out a number of interesting points. He believes that gynecologists are too prone to put off operating on apparently simple cases of fibroids and that they should be taken over by the surgeon early for the following reasons: The age incidence of fibroid is so varied that no importance can be attached to age as an indication for operation. Early operation would often allow of a conservative myomectomy, when delayed operation necessitates hysterectomy. In a large proportion of cases fibroid tumors are associated with pathological complications, many of which are of a dangerous nature. Diagnosis is still so uncertain that grave conditions urgently requiring operation may be mistaken for simple fibroids. The mortality attendant on the procedures of myomectomy and hysterectomy in the practice of experienced surgeons has become so reduced that operation may legitimately be advised for the relief of suffering when life is not directly threatened. Early operation prevents the health and life of patients from being sacrificed to the exploded fallacy of "waiting for the change of life."

The Treatment of Carcinoma Uteri by Radio-active Substances. (*Zur Behandlung des Carcinoma Uteri mittels Radiaktiner Substanzen.*) L. LANDAU, Berlin. *Zentralblatt für Gynäkologie*, March 14, 1914.

Landau favors radical extirpation of the operable carcinomatous uterus because there may be metastasis in the

fundus which, at a minimum depth of four centimeters, is not accessible to the radium rays or but little so. The thickened uterus, further, acts as a distinct filter to the rays. In the vaginal radical operation, the necrosis of the parametria—as much as two centimeters at times—and the suture of the stumps into the vagina, opens up wider fields of tissue for the subsequent application of the radium or other radio-active substances.

On the Etiology and Bacteriology of Leucorrhea. ARTHUR H. CURTIS, Chicago *Surgery, Gynecology and Obstetrics,* March, 1914.

Curtis reiterates that lacerations and displacements, cervical changes which cause increased mucous secretion, infections complicating pregnancy and gonorrhea, cause leucorrheal discharge. From his bacteriological studies he concludes that the uterine cavity tends to remain free from bacteria in cases of leucorrheal infection, although mucous secretion from the cervix may promote the development of purulent discharge; the lower genital tract is the usual seat of the formation of purulent discharges, however. The development of chronic leucorrhea in unmarried women is usually preceded by infection with gonorrhea, the gonococcus preparing the soil for other organisms. The majority of the bacteria producing leucorrhea are anærobes, Gram-negative bacilli predominating. The colon bacillus and the staphylococcus seem to be of secondary importance.

Attempts to Reduce the Time of Cure of Fibroids by Increase in the Dosage of the Roentgen Rays. (*Ueber Versuche, die Heilungs dauer bei der Myombehandlung durch Steigerung der verabreichten Roentgen mengen noch weiter Abzukürzen.*) ERWIN VON GRAFF, Vienna. *Zentralblatt fuer Gynäkologie,* March 14, 1914.

Von Graff concludes from his experience in ten cases that an increased therapeutic effect may be expected by an increase in the portals of treatment—such as by employing the vagina—and by simultaneously diminishing the number of applications, although the dosage of the Roentgen rays shall remain high. The ideal result would be obtained by distributing the rays over eight to ten fields of exposure in such dosage that ten to twenty X would continue their effects to a depth of from six to eight centimeters, the average depth of the ovaries from the surface.

Two Cases of Tearing Away of the Uterus after Vaginafixation. (*Zwei Fälle von Abreissung der Vaginifixierten Uterus von der Anheftungsstelle.*) J. VOIGT, GÖTTINGEN. *Zentralblatt f. Gynäkologie,* February 21, 1914.

Two patients upon whom a vaginal fixation had been performed for cystocele and for prolapsus uteri respectively, reported, one after two years, the other after a year and a half, sudden sharp pain in the abdomen. In both the uterus was found in retroflexion, and a thinning of the vagina, like a hernial opening, was detected in each instance. In the first case the accident followed working, in the second a fall.

A Case of Remarkable Fertility (Combined with Constant Bleeding in the Non-Pregnant Period). (*Ein Fall von Besonderer Fertilität [kombiniert mit Konstanten Blutungen in der Schwangershaftsfreien Zeit]*). BRUNO BERGER, Wieden. *Zentralblatt f. Gynäkologie,* March 7, 1914.

Berger reports the case of a woman who in twenty-five years of married life had thirty pregnancies with thirty-six fetuses. Twenty of the children lived. There were four sets of twins and one of triplets. She first menstruated at ten years of age and up to her marriage at twenty bled constantly. In the few intervals between her pregnancies, she also bled continuously. Berger regards the case as one of unusual richness in Graafian follicles and as an instance, as well, of continuous ovulation. The patient was herself one of twins.

Spontaneous Supravaginal Amputation of a Myomatous Uterus Caused by Twisting on Its Axis. (*Supravaginale Selbstamputation eines durch ein Myom um seine Achse gedrehten Uterus.*) L. RUPPERT, Vienna. *Wiener Klinische Wochenschrift,* March 12, 1914.

This remarkable case appears to be unique in medical literature. A woman 72 years of age was admitted to the hospital with symptoms of intestinal obstruction. For a year the patient had suffered from abdominal cramps, accompanied by slow increase in the size of the abdomen. During the week before admission these cramps became intense, and were accompanied by fainting spells. At operation a large myomatous uterus was found completely separated from the cervix except for a narrow strip of serosa. The uterus showed three twists from left to right and was attached merely by the broad ligaments. The abdomen contained some fresh and old blood. After hysterectomy the patient made a perfect cure.

Treatment of Fibroids by Deep Roentgentherapy. J. J. LEVY, Syracuse. *New York State Journal of Medicine,* April, 1914.

Levy comments upon the brilliant results obtained by Krönig and Gauss in the treatment of fibroid tumors of the uterus by *x*-ray. He states that 75 per cent can be cured by this method. The essential points in the treatment are: 1. Massive doses. 2. The use of a very hard tube, so that the more penetrating rays can be employed. 3. The tube must be near the part to be treated. 4. The use of a thick filter (aluminum) so that the soft rays which injure the skin can be excluded. 5. Cross-fire technique. This means that the rays are allowed to penetrate the abdomen at a different site at each sitting. The dose is regulated by means of the Sabouraud pastille and the Kienbock quantimeter. The rays cure by causing atrophy of the ovaries and in consequence premature menopause. The older the patient the shorter the period of treatment. The method is not indicated in pedunculated fibroids or those undergoing malignant degeneration. Finally, the method is perfectly safe.

Free Transplantation of Bone Into the Phalanges. S. L. HAAS, San Francisco. *Journal American Medical Association,* April 11, 1914.

The treatment of acute and chronic osteomyelitis of the phalanges by bone transplant and the methods that have been employed or suggested are taken up by Haas, who reproduces in brief the accounts of previously reported cases and two of his own. In each of these a transplant from the tibia with its periosteum attached was used after removal of the diseased bone with the necessary amount of the healthy bone and the involved tendon sheaths. In one case while the cosmetic result was good, owing to the limited amount of flexion, a good functional result was not obtained. In the second case, apart from a slight bend the finger appears almost normal and flexion and extension are nearly perfect. One of the most striking facts is the inactive part that the transplant seems to take in the regeneration as compared with the remaining portion of the preëxisting periosteum. As regards the preferable method, he thinks the removal of the whole phalanx and substitution of another is much more formidable than a partial resection. The question of the transplant ability of the epiphysis arises, but if it should be destroyed, it might be advisable to try a whole phalangeal transplantation, especially in case of tumors showing evidences of malignancy.

The Treatment of Acute Osteomyelitis of the Long Bones by Means of the Dental Engine and a Large Burr. F. G. DYAS, Chicago, *Journal American Medical Association,* April 18, 1914.

Dyas criticizes the usual method of treating osteomyelitis of the long bones by means of the mallet and chisel. They cause unnecessary traumatism, he says, and the attainment of sterilization is often impracticable even by the most skilled. The methods of the dentist in the treatment of jaw troubles are much better as regards the sterilization and the attainment of absolute asepsis in badly

decayed and infected teeth is a matter of every-day occurrence to the dentist. With this idea in mind he has treated a series of cases of osteomyelitis by exposing the diseased tissue, painting with a solution of one part glycerin, and two parts iodin before making the incisions, and then using a large burr driven by a dental engine until it has removed every suspicion of decayed bone and left a smooth surface instead of the ragged edges left by the chisel and mallet. The operator readily acquires the ability to tell when the burr is working in diseased or normal bone by the greater resistance offered by the latter. With the burr he can safely operate where with the chisel and mallet it would be dangerous, and the chance of the heat and friction generated by the burr destroying the microbes is to be considered. It has been shown by cultures made from the inner surface of machinery belts that mechanical influence may produce an effective bactericidal action. One case is reported showing the success of this method, and, as the article is offered as a preliminary report, the publication of further data seems probable.

"Tango" Foot. G. F. BOEHME, JR., New York. *Medical Record,* April 25, 1914.

Boehme has seen seven cases of a rather typical syndrome, which in every case could be ascribed to dancing, according to the modern style. The patient complains of pain in the outer anterior aspect of the leg at its lower third. Stiffness in extension and flexion of the foot becomes marked and the patient limps; over the region of the tibialis anticus tendon pressure causes slight tenderness; at this region, the typical crackling feeling of a tenosynovitis is noticed. Boehme regards the tenosynovitis as due to the excessive flexion and extension movements at the ankle necessitated by the modern forms of dancing. Treatment consists in rest, massage and counter-irritation.

Bone Transplantation for Defects in the Long Bones. (*Beitrag zur Knochentransplantation in Defekte von Röhrenknochen*). DR. KORENCAN, Vienna, *Wiener Klinische Wochenschrift,* March 19, 1914.

The author comes to some interesting conclusions from the observations of one case. About a quarter of the lower end of the femur in a boy nine years of age was resected for a small sarcoma of the bone. A piece of fibula covered by periosteum was inserted into the defect. Primary union was obtained, but a few weeks after the operation a fistula formed, discharging sero-purulent fluid. This persisting, the wound was reopened, and the transplanted piece of fibula, denuded entirely of its periosteum and partly necrotic, was removed. Despite this, the X-ray picture made four years later shows perfect continuity of the femur, with slight shortening of the lower extremity. The author concludes that the transplanted fibula served its function through the periosteum which it left behind. Korencan believes that the periosteum is the important element in restoring the continuity of a bone defect, and that it should be saved when possible in the course of bone resections. If this is not possible, the procedure carried out in this case should be attempted.

Epicondylitis (Franke) or Tennis Elbow. W. P. COUES, Boston. *Boston Medical and Surgical Journal,* March 26, 1914.

This injury most often occurs in tennis players, but may occur after any strenuous exercise involving the arm or even manual labor. There is pain in the elbow, accompanied by tenderness over the external condyle. The pain may be very severe, so that movement of the elbow is very painful, or the arm may seem paralyzed. The pain is increased by extension; may be intermittent or constant, and returns when the exercise is taken up again. After a period of weeks or months, with or without treatment, the pain and tenderness disappear. The cause of the trouble has not been cleared up, but the author suggests two possibilities: 1. "Tearing of some of the muscular attachments from the external epicondyle, giving rise to the separation of bony spicules." This was demonstrated in two of the three cases reported by the author. 2. "Injury to the radio-humeral joint capsule from antagonistic muscular contraction of the supinator brevis and supinator longus (Preiser)." Heat and fixation appear to be the best methods of treatment.

A Case of Extensive Replacement of Tendons by Means of Free Fascial Implantation. (*Ein Fall von Ausgedehnten Sehnenersatze durch frei Fascien-transplantation.*) J. GOBIET, *Orlau. Wiener Klinische Wochenschrift,* February 26, 1914.

Following an infected injury of the dorsum of the hand, all the extensor tendons of the hand, with the exception of the thumb, became completely necrosed and sloughed away. When the wound had completely healed, the dorsum of the hand was exposed by a large flap and defects in the tendons were found varying three to five cm. in length. Four broad strips were prepared from the fascia lata of the thigh. These were then sewed between the divided ends of the tendons in such a manner that the ends were rolled around the ends of the tendon while the intervening portions were made into a canal. Fine silk sutures were used. Despite some infection, the functional result was excellent.

Indications for Intestinal Resection in the Radical Cure of Certain Herniae. (*Dans Indications de la Resection Intestinale dans la Cure Radicale de Certaines Hernies.*) E. QUÉNU and H. CONSTANTINI, Paris. *Revue de Chirurgie,* April 10, 1914.

When strangulation or gangrene of intestine exists, the indications for the treatment of the bowel are fairly well defined. The authors, however, find that the treatment of the intestinal contents not strangulated but otherwise diseased has not been sufficiently considered. They have collected a number of these cases, and include their own as well. They find that resection may be indicated:

1. In some unusual instances of herniæ containing tumors of the intestine.
2. In rare cases of localized tuberculosis of the intestine in the sac.
3. In adherent herniæ when (a) the intestinal wall is considerably damaged in freeing it; (b) extensive avulsion of the serosa is the result of operative manipulations; (c) the intestine, freed from adhesions, is found covered with extensive scar tissue; (d) several loops of gut are found very intimately adherent to one another.
4. No definite conclusion for the treatment of intestine that is found in enormous herniæ, and has no place in the abdominal cavity, has as yet been reached by the authors.

Profuse Hemorrhage in Tuberculosis of the Kidney; The Use of Adrenalin Injections as an Adjuvant to Treatment. R. P. CAMPBELL, Montreal. *The American Journal of Urology, Venereal and Sexual Diseases,* April, 1914.

Two cases of tuberculosis of the kidney are reported in which the hemorrhage was so profuse that the bleeding of renal tumor, or hemophilia, or "essential hematuria," was simulated. The first case was operated upon for "essential hematuria" after the cystoscopic examination showed that blood was spurting from one ureteric orifice and that there were no signs indicating tuberculosis; it was only when the capsule of the kidney was stripped preparatory to fixation that a small tuberculous focus was found. In the second case the very active bleeding was very well controlled by repeatedly washing out the renal pelvis with 1-3,000 adrenalin solutions.

Spinal Transplant. H. B. THOMAS, Chicago. *Journal American Medical Association,* April 4, 1914.

Thomas says that the non-operative treatment of tuberculous vertebræ is usually satisfactory when it can be continued over a long period of time. It is, however, impossible to control some cases so as to give rise to a firm ankylosis, and he illustrates these types by case-reports in one of which a transplant from the tibia is used. He asks, if this last case is not thus a better risk than if treated by long recumbency and braces. A shortened period of treatment is also a matter of consideration. The facts that should be considered in cases for operation are given as follows: "1. The general vitality of the patient. 2. The

age. 3. The position of the disease in the vertebral column. 4. The amount of bone destruction. 5. The amount of the callus formation. 6. The control of the patient. 7. The eagerness of patient and friends for shortened duration of treatment." The more vigorous the constitution, the better the risk, but it is surprising, Thomas says, how well the patients stand the operation. The question of age is considered, some fearing the graft may not grow but tend to increase deformity with growth. Experiments are in progress, he says, to determine the growth or non-growth of the graft which will be reported in the future. The position of the disease in the vertebral column may be a contra-indication, as in cases involving the high dorsal and low cervical region when the knuckle is so sharp and high that the occiput touches it and prevents space for working and in cases in which the disease is in the middle and upper cervical regions. He is inclined to favor the lower dorsal, lumbar and sacral regions as most favorable for the Albee operation and the middle and upper dorsal and cervical regions for the Hibbs operation. With great bone destruction such help in ankyloses as comes from the graft is indicated more than in those in which the small bone destruction can more easily be replaced from the vertebral bodies. The amount of callus formation and its ankylosing effect is the greatest element in the cure of these cases, and where it is large and strong enough to hold the back firmly, there is no need of a bone graft. The desire of the patient and friends to cut down the mechanical treatment should be, of course, considered, in deciding to operate. A number of cases are reported and the following tentative conclusions are offered: "1. The operation is not severe. It is a double operation, and the length of incision is longer than in most operations, yet the recovery from the immediate effect is quick and the suffering is small. 2. Cases with discharging sinuses near the field of operation should not be refused operative treatment on account of the sinus, unless it lies within the field of incision. 3. Complicating pulmonary tuberculosis is not a contra-indication in all cases. 4. If the ends of the transplant are loose, they absorb. If they extend beyond the spinous process, that portion not attached will absorb back to the firm attachment. 5. Loose ends and broken ends, as in the middle of a bent graft, grow, when later, through fixation by position and quiet, they become attached. 6. The three cases complicated with Pott's paraplegia have not markedly improved. The longest time elapsing since the operation of a paraplegia case has been six months. During this time the position has been good and such as to give hyperextension. 7. The young patients do better than the adults. 8. The operation has a distinct place in the treatment of selected cases of tuberculous spondylitis. 9. Albee's method of operation is preferable in the large majority of cases on account of the location of the disease and the size of the kyphosis. 10. Operative treatment should be followed by months of perfect quiet for the transplant."

Blood Transfusion. Report of 135 transfusions by the Syringe Canula System. E. LINDEMANN, New York. *Journal American Medical Association,* March 28, 1914.

Lindemann gives an analysis of 135 transfusions made by the syringe canula method in a large number of diseases, anemia, hemophylia, hemorrhages from various causes, etc. The ages of the patients ranged from 6 months to between 70 and 80 years. There were 243 canula insertions in the veins, and the largest amount transfused at one sitting was 2,000 c.c. from two donors. The largest quantity from one person at one sitting was 1,260 c.c., and there were numerous donors who gave from 900 to 1,000 c.c. The recuperative power of a healthy donor is remarkable. While reaction from a blood-transfusion from a near relative is generally least, in many cases alien blood is equally congenial. As regards blood-tests before transfusion, Lindemann's view has always been that unless the serologic report is respected it is useless to perform the test. In the large number of donors tested, a certain number of incompatibilities were discovered and eliminated. Laboratory work unless well done is worthless and it has its limitations in any case. Only once, however, in this series did the laboratory fail. One case is reported and a number of tables are given in the article. Lindemann says, "Not only is blood-transfusion a matter requiring skill. but problems in pathology, physiology, serology, immunity, chemistry and clinical medicine also constantly arise that require special study. Every large hospital in which such work is done should have on the attending staff a hematologist who can give to such work the degree of specialization necessary to meet the many problems and direct the work. A waste of good blood may be prevented and applications seen that might otherwise be overlooked."

An Extensive Case of Plantar Warts. R. L. SUTTON, Kansas City, *Journal American Medical Association,* April 25, 1914.

Sutton says that while the subject of plantar warts has been carefully studied by several authors within recent years, the true nature of the condition is seldom recognized even to-day. For this reason he reports a case which is the most extensive he has ever seen and which he has studied microscopically. These cases are notoriously resistant to treatment, and recurrence frequently takes place after excision. Of all the methods tried he gives first place to Pusey's carbon dioxid snow, fulguration second, and Roentgen treatment third. Before the snow or electric current is applied, the epidermal lids of the little tumors should be removed by a 10 per cent. salicylic plaster. Roentgen treatment is especially applicable when there are numerous lesions, which frequently disappear as if by magic. In the case reported all three methods were used and the cure was apparently complete in three weeks.

The Disappearance of Sugar in Diabetics After Certain Pelvic Operations. E. H. EISING, New York, *Journal American Medical Association,* April 18, 1914.

Eising reproduces the reports of four published cases, all he has been able to find in the literature, and reports two of advanced prostatic disease with pronounced and severe diabetes in which all traces of sugar had disappeared from the urine soon after operation. In both cases the absence of sugar was permanent. Eising says that in the present state of our knowledge it is useless to attempt any explanation. Spontaneous cure in diabetes has been known, according to Naunyn, but very rarely and only after traumatic or syphilitic diabetes of short duration. The wide distribution of the organs that may cause glycosuria in their pathologic condition might, he says, suggest, that certain pathologic conditions of internal secretions of organs in the pelvis might disturb the glycogenetic function. The temptation is great but further speculation is hardly wise at present. One inference is possible, namely, that diabetes must no longer be viewed as an absolute surgical barrier, at least for hysterectomy and prostatectomy, and that in some cases a possible cure may occur.

Three Cases of Wiring With Electrolysis for Aortic Aneurysm. H. A. HARE, Phila. *Journal American Medical Association,* April 18, 1914.

Three cases of wiring with electrolysis for aortic aneurysm, one of them heretofore in part reported, are described by Hare. During the wiring of the first case, the wire broke off but he was fortunately able to push the remaining wire beyond the broken piece and continue the operation. Investigation showed that the wire was an alloy of gold and copper and the electrolysis had eaten the copper and weakened it. Experiments made at Hare's instance by an expert on the effects of electrolysis on wire, using normal solutions to represent the blood, confirmed in this opinion and showed that a copper alloy is unsafe for this operation. In a previous article Hare reported a number of cases of this character and he reproduces his conclusions as then stated. He sees no reasons for changing his views but once more emphasizes the fact that only specially prepared wire can be used, and silver wire, since it does not coil, cannot be employed. If too much current is used serious damage may be done and when the street current is employed it is necessary that not only the table on which the patient lies should be insulated, but also that the operator wear thick rubber shoes and stand on a perfectly dry floor.

Successful Resection of a Benign Tumor of the Liver. (*Tumeur Bénigne du Foie. Résection Partielle du Foie, Guérison.*) DR. TÉMOIN, Bourges, France. *Archives Provinciales de Chirurgie*, March, 1914.

The case is reported not merely because of its rarity, but because the symptoms, the course, the physical examination, all pointed to a cancer of the liver. Témoin therefore believes that an exploratory laparotomy should be performed in all instances in which the diagnosis of cancer cannot be definitely established. The patient was operated upon by the author sixteen years before for cholelithiasis, and the gall-bladder was removed. She remained well until a year ago, and then began to complain of pain and vomiting. The physical examination indicated a carcinoma of the liver, as above indicated. At the operation the tumor was found incorporated in the right lobe of the liver, and appeared typical of a solitary carcinoma. The rest of the liver appeared normal. The tumor could be shelled out of the liver tissue without any difficulty, and the hepatic wound could be closed. Although it appeared, macroscopically, to be of cancerous nature, microscopically it proved to be inflammatory.

The Treatment of Granulating Wounds With Dry Air. (*Die Behandlung Granulierender Wundflaechen mit Getrockneter Luft.*) H. POTH, Berlin. *Deutsche Zeitschrift fuer Chirurgie*, Vol. 127, Parts 1 and 2.

The apparatus devised by Kutner was employed in all cases. It fulfills all the requirements laid down by Kutner: the air is really dry, it is free from bacteria, its temperature can be regulated, and the air strikes the surface of the wound in currents. The one objection to the apparatus is its expense. Splendid results are described by Poth. The secretions from the wound rapidly diminish. The flabby granulations quickly regain tone and appear healthy; they gradually contract and thereby reduce the size of the wound. The ill-defined epithelial edge of the wound becomes sharply demarcated, and the surface of the wound is soon covered by epithelium advancing from the edge. The epithelial covering of the wound by this treatment is firm yet very elastic.

Massive Collapse of the Lung. W. PASTEUR, London. *The British Journal of Surgery*, April, 1914.

This is differentiated by the author from the commoner instances of partial collapse of the lung. The condition is of interest to surgeons because it occasionally follows operations and, especially, laparotomy. Pasteur believes that massive collapse of the lung is often unrecognized, the condition being generally designated "post-operative pneumonia." He describes the symptoms and physical signs that he believes are characteristic of the condition. It may at once be said, however, that the only positive diagnostic sign of massive collapse of the lung is displacement of the heart towards the collapsed side. If the collapse is bilateral the diagnosis cannot be made. The only practical advantage in making the diagnosis relates to prognosis; that of post-operative pulmonary collapse is almost invariably good; that of pneumonia is, as well known, not so good. The mechanism of production of lung collapse is not well understood.

Results of Three Years Clinical Work With a New Antiserum for Cancer. W. N. BERKLEY, New York. *Medical Record*, April 25, 1914.

This report is a continuation of a previous one made two years ago. The serum (preparation not given) is given intravenously or subcutaneously in doses of five to 50 c.c. at intervals of a few days. If any benefit is derived it is seen at the end of six to eight injections. The report covers the result in 71 cases, 32 secondary or inoperable, 39 treated after primary operation. In none of the 32 secondary or inoperable cases does Berkley claim a cure, but he reports a number of instances in which complete disappearance of the tumor resulted, and others in which there was improvement locally and symptomatically. The report on the 39 cases treated after primary operation leaves much to be desired in clearness. Berkley reports such cases "successful" which did not recur when treated by his serum after operation. Why the "success" should not be entirely referred to a well-executed operation, we do not see. The author also reports a few good results in recurrences after operation.

A Magnetized Needle Holder. C. M. STIMSON, Philadelphia. *New York Medical Journal*, April 25, 1914.

Stimson finds that a magnetized needle holder is quite useful in locating needles or pieces of needles in the course of operations. Such a needle holder may save, therefore, a little time. Any needle holder may be magnetized by placing it on a dynamo for three or four hours. The magnetic properties are not affected by boiling.

Sciatica from the Orthopedic Viewpoint. JAMES K. YOUNG, Philadelphia. *The International Journal of Surgery*, March, 1914.

From the orthopedic viewpoint the most common causes for sciatica are strains and displacement of the sacro-iliac joint, due to acute or chronic traumata. In unusual instances sacro-iliac relaxation may depend upon general debility. Sciatica as a result of the sacro-iliac lesion is not of distinctive type, and if the joint affection cannot be diagnosed (by physical examination and *x*-ray), the other, less common causes of sciatica, must be considered. The author enumerates these. When the diagnosis of a sacro-iliac lesion has been made the treatment is clearly defined: If there is displacement, reduction and a broad pelvic band to immobilize the pelvis. If there is no displacement, the application of the band. Local application of massage.

An Additional Report on the Non-Operative Treatment of Carcinoma. (*Weitere Erfahrungen bei der nicht Operativen Behandlung des Krebses.*) KROENIG, GAUSS, KRINSKI, LEMBCKE, WAETZEN, KOENIGSBERGER-FREIBURG. *Deutsche Medizinische Wochenschrift*, April 9 and April 16, 1914.

Although the highly technical aspects of mesothorium and *x*-ray treatment of carcinoma cannot be reviewed here, the tremendously significant results of the continued work of these investigators should be noted. Their histological examinations have shown that there is no striking difference between the results of Roentgen and those of mesothorium therapy of cancer. The selective action of these two on cancer cells is about the same, and both show the same relatively inocuous effect on normal cells. Complete retrogression of deep-seated cancer has been induced by these investigators by both methods, and without any pronounced injury to the surrounding tissues, the complete retrogression of these cancers is now of two years' duration.

In cases of cancer on the borderland of operability, the results of Roentgen-therapy are greatly superior to those of operation. Roentgen-therapy should also be chosen instead of operation in operable carcinomata when the tumor is readily accessible to "cross-fire." This statement will of course not be definitely established until five years of Roentgen treatment for this group of cases have passed.

Congenital Tumors of the Neck. C. E. CALDWELL, Cincinnati. *The Lancet-Clinic*, March 28, 1914.

Caldwell describes a case of neck tumor in a boy aged eight. He calls the tumor a congenital multilocular lymphocele, and discusses tumors of the neck region in the light of recent studies in the embryology of the structures of the neck. He quotes the conclusions of Savelli, "Serous congenital cysts of the neck are lymphangiomata. The pathogenic theory that they are derived from ductless glands, and the vascular theory, the derivation from angiomata, should be abandoned. We think that the congenital serous cysts of the neck are due to an arrest of the development of the lymphatic system of the cervical region. This hypothesis is based on what the sections of embryos of different ages have shown us and on what we know of the vices of development of the lymphatic system. It explains all the anatomical peculiarities of congenital cysts of the neck." The work of Florence Sabin is also quoted as corroborating this, for it shows that the lymphatic cavities known as the "jugular sacs," described by her are the fetal *anlagen*, the abnormal development of which gives rise to the multilocular cysts of the neck.